PB82-109380

# Ohio Basin Interstate Energy Options Constraints of Federalism

Ohio River Basin Energy Study
Urbana, IL

Prepared for

Environmental Protection Agency
Washington, DC

Sep 80

**U.S. Department of Commerce**
**National Technical Information Service**
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PB82-109380

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PAGE NUMBER
EPA-287 (Cin.)
(4-76)

September 1980
EPA-600/7-81-054

# OHIO BASIN INTERSTATE ENERGY OPTIONS: CONSTRAINTS OF FEDERALISM

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Prepared for

Ohio River Basin Energy Study (ORBES)

Grant No. EPA R805588

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Washington, D.C. 20460

OFFICE OF RESEARCH AND DEVELOPMENT
U.S. ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

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## TECHNICAL REPORT DATA

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| | | |
|---|---|---|
| 1. REPORT NO.<br>EPA-600/7-81-054 | 2. | 3. RECIPIENT'S ACCESSION NO.<br>PB82 109380 |
| 4. TITLE AND SUBTITLE<br>Ohio Basin Interstate Energy Options:<br>Constraints of Federalism | | 5. REPORT DATE<br>September 1980<br>6. PERFORMING ORGANIZATION CODE |
| 7. AUTHOR(S)<br>Boyd R. Keenan | | 8. PERFORMING ORGANIZATION REPORT NO. |
| 9. PERFORMING ORGANIZATION NAME AND ADDRESS<br>Department of Political Science<br>University of Illinois at Chicago Circle<br>Chicago, Illinois 60680 | | 10. PROGRAM ELEMENT NO.<br>C2JN1E<br>11. CONTRACT/GRANT NO.<br>R805588 |
| 12. SPONSORING AGENCY NAME AND ADDRESS<br>U.S. Environmental Protection Agency<br>Office of Research and Development<br>Office of Environmental Engineering & Technology<br>Washington, D.C. 20460 | | 13. TYPE OF REPORT AND PERIOD COVERED<br>14. SPONSORING AGENCY CODE<br>EPA-ORD |

15. SUPPLEMENTARY NOTES
This project is part of the EPA-planned and coordinated Federal Interagency Energy/Environment Research and Development Program.

16. ABSTRACT

This report was prepared as part of the Ohio River Basin Energy Study (ORBES), a multidisciplinary policy research program supported by the Environmental Protection Agency. It addresses regional and interstate approaches to power plant siting and operations in the ORBES study region, which consists of all of Kentucky and substantial portions of Illinois, Indiana, Ohio, Pennsylvania, and West Virginia. Among the topics covered are power plant impacts in the federal context, interstate air quality conflicts and available remedies, air quality control possibilities, water-related considerations, and the interstate structure of the power industry.

17. KEY WORDS AND DOCUMENT ANALYSIS

| a. DESCRIPTORS | b. IDENTIFIERS/OPEN ENDED TERMS | c. COSATI Field/Group |
|---|---|---|
| Environments<br>Energy Conversion | Integrated Assessment<br>Conversion<br>Coal<br>Nuclear<br>Synthetic Fuels | |

| | | |
|---|---|---|
| 18. DISTRIBUTION STATEMENT<br>release to public | 19. SECURITY CLASS *(This Report)*<br>unclassified | 21. NO. OF PAGES<br>98 |
| | 20. SECURITY CLASS *(This page)*<br>unclassified | 22. PRICE |

EPA Form 2220-1 (9-73)

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# FOREWORD

The Ohio River Basin Energy Study (ORBES) is an interdisciplinary, multi-university inquiry into the environmental, economic, and social impacts of energy facility development in a major portion of the Ohio River Basin. The study was initiated by the U.S. Environmental Protection Agency in 1976 in response to a directive from the U.S. Senate Appropriations Committee.

Most of the ORBES research was conducted by a group of faculty members at the University of Illinois, Indiana University, the University of Kentucky, the University of Louisville, The Ohio State University, the University of Pittsburgh, Purdue University, and West Virginia University. In a few instances, the necessary expertise was found at other universities or independent research organizations.

This report is one of a series produced in support of the overall ORBES assessment. For a summary of the entire study, see Ohio River Basin Energy Study (ORBES): Main Report, by the ORBES Core Team, also being published by the U.S. Environmental Protection Agency.

# PREFACE

In the summer of 1975, a committee of the United States Senate directed the U. S. Environmental Protection Agency (EPA) to assess the impacts of the proposed concentration of power plants in a major portion of the Ohio River Basin. (Other "energy sources" also were to be assessed, but the emphasis was to be placed upon generating facilities.) EPA, in turn, selected a group of Ohio Valley and midwestern university faculty members to carry out the assessment known as the Ohio River Basin Energy Study (ORBES). The effort has been in progress since the fall of 1976. The researchers are now in the final stages of summarizing their most significant findings. Necessarily, these findings must be presented in abbreviated form in a final main report upon which general consensus has been reached by a 13-member ORBES "core team."

Individual core team members have attempted to be responsive to requests from a number of constituents for analyses within their respective areas of competence. Chief among these have been their colleagues on the core team, who jointly determined which materials should be included in the main report. Other constituents have varied in number and character for core team members, dependent in part upon the academic discipline of the researcher. Those dealing with issues of governmental concern have been particularly sensitive to questions and counsel from public officials serving on an ORBES Advisory Committee and from other policymakers, including members of Congress.

Among certain environmental groups and regional bodies a feeling persists that an interstate approach might ameliorate negative impacts from power plants in localized portions of the ORBES region or even in the entire region. Even before the Senate committee mandated the ORBES study, consideration of proposals in the U. S. Congress encouraged the view that regional mechanisms might be helpful. By the time the ORBES study was launched in the fall of 1976, discussions of such mechanisms had begun among leaders of regional organizations, other policy makers, and residents in areas where plants were being concentrated. These mechanisms can generally be categorized as relating to either plant "operations" or plant siting.

At the beginning of Phase II of ORBES, the core team decided that the main report would be built chiefly around a "scenario" methodology whereby plausible but hypothetical conditions would be assumed for each scenario. Then, impacts from the various scenarios would be assessed. A limited number of regional operational options were incorporated into various scenarios. However, to be faithful to this "impact assessment" approach, the core team felt that it would be impossible to objectively translate interstate and/or regional siting policies into scenarios.

Because of this feeling that the scenarios could not meaningfully reflect controversies centered around interstate siting, the core team was faced with a dilemma. How should the topic (interstate siting) -- which has generated considerable interest in the region -- be discussed outside the framework of the central methodology being utilized in the study? In varying degrees, most members of the core team felt that, despite the scenario emphasis in the main ORBES report, some attention should be given to possible interstate mechanisms being discussed in various settings. In narrative form such treatment will be given in the final report. But it was recognized that space in the main report would not permit broad background coverage of the subject there. Thus initially, the core team commissioned Professor James A. McLaughlin of the West Virginia University College of Law to prepare a legally-oriented support report emphasizing legal issues associated with the topic. Entitled Legal and Institutional Problems of the Interstate Coordination of Electric Power Plant Siting and Development, that study has now been completed. Professor Vincent Cardi, also in the College of Law, was the core team member responsible for coordinating Professor McLaughlin's research with the team's activities.

As the work of the core team and support researchers drew to a close, it became evident that space in neither the main ORBES report nor Professor McLaughlin's legal study would permit broad treatment of major aspects of proposals for interstate mechanisms for plant operations and siting. Among such aspects is the matter of structural and "political" constraints inherent within our federal system of government. Though these matters are both controversial and difficult to address objectively, it was decided that this report should be included in the ORBES publication series. (As a background paper however, it does not necessarily represent the views of the core team as a whole.)

In the final months of the ORBES project, regional impacts from proposed coal-based synthetic fuel installations in portions of the ORBES region have become a source of concern. This condition has led many of those advocating interstate siting of power plants to the view that a broader facility siting arrangement should be considered in the Ohio Basin area. The ORBES study does not focus upon impacts from synthetic fuel facilities. But these developments have stimulated such an interest in broad energy facility siting that discussions of interstate power plant siting alone do not reflect current political and institutional dynamics. Thus, although the emphasis is on interstate power plant siting in this report, its title and the final chapters reflect broader energy facility siting concerns.

Another dilemma faced by ORBES researchers from the beginning of the project is relevant here. Those members of Congress expressing interest in the study offered contradictory counsel on the question of whether recommendations should be included in the main ORBES report or in accompanying documents. Two views were heard: (1) that the most responsible position of the ORBES researchers would be to present institutional options for addressing problems in the region and then offer recommendations as to the most appropriate of these options; and (2) that options should be identified but that no recommendations should be made. This document, like the main report, reflects the opinion of the author and of the full core team that the Senate committee originally mandating the study sought a range of options but not recommendations.

The author is indebted to virtually all members of the core team and several support study authors. Probably his greatest debts are to Professor McLaughlin, Professor Cardi, and Professor James J. Stukel. The latter was particularly helpful in attempting to alert the author to the technical intricacies of interstate air quality issues. Mention should also be made of the ORBES Phase I report by Professors Nicholas L. White and John F. Fitzgerald (both then at Indiana University), entitled Legal Analysis of Institutional Accountability for the Ohio River Basin. Finally, the valuable assistance of Ms. Rita Harmata, ORBES research associate, is gratefully acknowledged.

However, the author takes full responsibility for the contents of this volume. Although it utilizes several ORBES publications in addition to the author's research, the author alone made judgements in regard to interpretations included here.

Chicago, Illinois
Summer, 1980

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# Chapter 1

# INTRODUCTION

As defined by hydrologists, the Ohio River Basin sprawls across portions of fourteen states. Only six of these states -- Illinois, Indiana, Kentucky, Ohio, Pennsylvania, and West Virginia -- actually border the river itself. (The remaining states are Tennessee, New York, North Carolina, Virginia, Maryland, Mississippi, Alabama, and Georgia.) For reasons discussed below, this report mainly treats only the six "river" states although an effort is made to place them in the context of the broader basin and of the nation.

Actually, the discussion does not focus upon these six states as separate entities but rather upon their interactions with one another, with groups of other states, and with the national government.[1] The use of the word "energy" in the title may be misleading in that not all forms of energy are examined; however, no other term seemed to fit. It should be noted at the outset that the Ohio River Basin Energy Study (ORBES), for which this paper was prepared, does not address all the types of facilities covered briefly at the end of this report. However, the subject matter being explored in this particular paper would be of limited value without the cursory treatment of overall interstate configurations, including nongenerating installations. For example, discussions of possible interstate approaches to mitigating negative power plant impacts recently have been broadened in the public sector to include consideration of such facilities as coal-based synthetic fuel plants.

## 1.1 REGIONAL AND NATIONAL BACKGROUND

Residents in various areas of the Ohio River Basin became concerned as early as 1974 that the concentration of electric power plants in various parts of the basin might lead to adverse conditions at both local and regional levels. For example, in that year a group of residents living along the Ohio River in Indiana and Kentucky between Louisville (Ky.) and Cincinnati (Ohio) expressed alarm at the planning for new electric generating stations.

In response to this particular concern, a subcommittee of the U.S. Senate Appropriations Committee requested the U.S. Environmental Protection Agency (EPA) to conduct a study of possible impacts from such a concentration of power plants. The EPA awarded a series of grants over a period of more than four years (1976-1980) to faculty members at a group of Midwestern and Ohio Valley universities to carry out the study. The project became known as the Ohio River Basin Energy Study (ORBES), and the main report of that study will be completed late in 1980. This paper is among the special reports prepared during the course of the ORBES project.

Concern over power plant siting in the Ohio River Basin followed that felt in several other parts of the country by five or six years. In particular, questions were being raised in the Northeast. Initially, most attention was focused on nuclear generating stations, but it soon became evident that siting and operation of fossil fuel power plants likewise represented a problem of major dimensions. It was also recognized that interstate aspects of the problem required attention and that the federal character of our political system presented difficulties in addressing relevant issues on an interstate or regional basis.

By 1970, a small group of U.S. senators and representatives were introducing legislation to provide for "wall-to-wall" intergovernmental power plant siting across the nation. Among the most prominent of such proposals was a measure known as "The Intergovernmental Coordination of Power Development and Environmental Protection Act" (1). It was introduced early in 1970 by then-Sen. Edmund Muskie of Maine, chairman of the Subcommittee on Intergovernmental Relations of the Senate's Committee on Government Operations.

The bill declared that "lack of coordination and consultation and effective procedures among the Governors of the States and Federal, regional, and State agencies discourages joint planning for the supply of electric energy and impedes efforts to promote the welfare and safety of the people of the United States" (2). The proposal also asserted that:

> ...electric utilities are public utilities, and the interstate character of the electric utility industry, the effects on interstate commerce of such industry's facilities, the vital nature of the service it provides, and the impact of such industry on national environmental assets demand Federal leadership and financial assistance through intergovernmental cooperation with appropriate regional, State and local agencies to protect the public interest bulk power supply" (3).

One purpose of the proposed Act was described in the draft as follows:

> ...(to) preserve and enhance the environment by insuring that the siting and construction of bulk power facilities is consistent with local, State, regional, and national programs for the control of air and water pollution, multipurpose use of land, and conservation of other natural resources (4).

In lengthy hearings on this bill in 1970, provisions of the measure were debated. Under the proposed legislation, regional districts and boards would have been established around the country. A national agency to be designated by the President would have supervised these regional bodies. A similar bill was introduced by Sen.Edward Kennedy of Massachusetts.

In arguing for passage of his bill, Sen. Muskie asserted that "the threat to our environment and to the reliability and adequacy of our supply of electric energy is too great to leave these decisions to the electric utilities" (5). Sen. Muskie was not successful in obtaining passage of his proposal. Many observers at the time felt that the inclusion of the provision for interstate-regional bodies which would have participated in the siting of power plants was a factor in the proposal's failure. Members of Congress understandably wish to protect the rights of their individual states, and they were suspicious of a proposal to establish new regional bodies. Under Sen. Muskie's proposal, of course, these regional bodies would ultimately have been under the jurisdiction of a federal agency. This pattern was particularly offensive to a number of congressmen and governors, particularly those from Southern states.

At about the same time, however, a group of Southern governors were recognizing some of the same interstate dilemmas associated with the siting and operation of power plants and related environmental issues. Through the Southern Governors' Association, an interstate compact was drafted to address these problems. Understandably the governors wished to preserve a greater role for the states, as opposed to the national government, in regional electric power activities. Approval of the compact was obtained by the U.S. Senate without a negative vote, but a New York congressman who chaired a critical committee in the House of Representatives was successful in keeping the proposal from reaching a vote in the House.[2] Thus, during the same year (1970), efforts by both a group of governors and powerful figures in the congress to devise interstate mechanisms for power plant siting were foiled by the realities of American federalism.

It is worth emphasizing again that both Sen. Muskie and Sen. Kennedy fought for national leadership in meeting the challenges associated with power plant siting and other electric power problems while the Southern governors sought a state-oriented approach to achieve many of the same objectives. The failure of the advocates of national supremacy, on the one hand, and supporters of states' rights, on the other, to obtain the required support for their positions illustrates the character of the federal system, which has prevailed since the U.S. Constitution was ratified in 1789. There has always been a constant tension between spokesmen for these two positions on most critical issues. But only in the past 12 or 15 years have political leaders been much interested in the siting and operation of power plants. And the significant role of electric power in society now requires both leaders and responsible citizens to examine the developing interaction between our federal system and electric power generation.

## 1.2 REPORT IN CONTEXT OF ORBES

The main ORBES report is yet to be published, and neither this paper nor other individual documents can claim to speak for the core team, the research group responsible for the main report. This report and other support papers are efforts of university faculty members (and a limited number of researchers at other organizations) to present analyses in a large number of related fields.

The emphasis in this report on negative impacts should not be construed as implying that no positive impacts accrue from electric power generation in the ORBES region. Health and economic advantages from electric power, as well as other benefits, are often overlooked. Three of the last four winters through which the region's residents have passed have been severe, and electric power has reduced much human misery during these periods. Also, unprecedented heat episodes, accompanied by record numbers of heat-related deaths, might have been even more devastating if electric power reliability had not been so well maintained during the summer of 1980. Of course some environmentalists in the region claim that active air conditioning units have caused the power plants to produce more pollution, neutralizing some of the benefits. Such divergent points of view point up the challenges to be faced in the years ahead in attempting to measure and assess the "tradeoffs" between the positive and negative benefits of electric power and other forms of energy.

This paper is in part a response to specific requests from citizens and policymakers who desired a discussion of negative impacts at the interstate level and of current institutional proposals being considered to mitigate such impacts. The discussion is admittedly subjective in that it at times represents the author's personal judgement of current and possible interstate conditions. Though the presentation occasionally draws upon data and analyses of other ORBES researchers, it is not based upon any specific ORBES scenario to be discussed in the main report. Thus neither the ORBES core team nor other researchers associated with the study are responsible for the contents of this paper. It should be emphasized again that attempts here to discuss power plants in the broader context of all interstate energy facility problems and options for addressing them represent only the views of the author.

# Chapter 1

## Notes

1. Disputes have long raged over the appropriate use of the terms national and federal. Even many of the most careful scholars use the two words interchangeably. When possible, the attempt is made here to use "national" in reference to the government centered in Washington. "Federal" is used with respect to the system which is formed by the constitutional delegation of powers to the national government and the reserving of all other powers to the various state governments.

2. The congressman was the late Emmanuel Celler of New York, chairman at the time of the House Judiciary Committee. Professor Eugene Mooney contends that Rep. Celler "still smarted" from a controversy with the New York Port Authority in 1950 and therefore "apparently hated *all* interstate compacts." See Eugene F. Mooney, "Another Look at the Interstate Compact: "A Supple Device," In Boyd R. Keenan (Ed.), *Energy and Environment: An Intergovernmental Perspective* (Proceedings of the Ohio River Valley Assembly), Institute of Government and Public Affairs, University of Illinois, January, 1978, p.138.

## References

1. S. 2752, 91st Cong., First Sess.
2. S. 2752, 91st Cong., First Sess., Sec. 2 (a) (1).
3. S. 2752, 91st Cong., First Sess., Sec. 2 (a) (1).
4. S. 2752, 91st Cong., First Sess., Sec. 2 (b) (2).
5. "Intergovernmental Coordination of Power Development and Environmental Protection Act," Hearings before the Subcommittee on Intergovernmental Relations of the Committee on Government Operations, Washington, D.C., February 3 and April 29, 1970; and Annapolis, Md., February 4, and March 3, 1970, p. 31.

# Chapter 2

# FEDERALISM AND POWER PLANT IMPACTS

An understanding of interstate dynamics within the ORBES region is dependent upon knowledge of the American federal system. Most definitions of federalism involve the idea of division of powers. It is this concept which separates a federal from a unitary (or centralized) form of government. To quote Richard Leach: "Each level of government in a federal system insists upon its rights to act directly upon the people. Each is protected constitutionally from undue encroachment or destruction by the other" (1).

The federal system has been tested severely since the Arab oil embargo in the fall of 1973. In particular, every sector of the broad United States energy system has been affected dramatically. Recognition of our dependence upon foreign oil supplies forced reassessment of our total fuel situation. This dependence itself and the escalation of oil prices brought domestic coal into prominence. National policies increasingly called for this coal to replace foreign oil in every way possible.

National legislation offered incentives to those electric utilities that could make the switch and penalized those which could not. As this is being written, Congress is debating a measure, known as the "backout" bill, which would provide public funds to help electric utilities convert their oil boilers to coal-burning units.

Of course in earlier times coal was heavily relied upon by electric utilities and other industries. But that was before the environmental movement had brought so many constraints, and its use presented far fewer problems. The post-embargo emphasis upon coal brought new strains upon the U.S. federal system. Cleavages between and among states produced conflicts that had not been experienced before. These included competition between older coal operators in the East and Midwest, where much of the coal is high in sulfur content, and Western coal interests, who offered low-sulfur coal.

Friction even developed among states East of the Mississippi, where there were also differentials in the sulfur content of the coal. Among the ORBES states, West Virginia, Pennsylvania, and the Eastern part of Kentucky contained much low-sulfur coal. Coal in Western Kentucky, Illinois, Indiana, and Ohio was mostly high in sulfur content.

Competition for coal sales has increasingly been matched, as discussed at length below, by conflicts among the ORBES states and neighboring states over air pollution moving from one state to another.

## 2.1 ENERGY BALKANIZATION OF FEDERAL SYSTEM

Energy-related conflicts which have developed since the 1973-74 oil embargo among states and between various regions of the country have popularly become known as a part of the "balkanization" of the federal system. The term has not been precisely defined, but generally to balkanize is to break up an area into smaller and often hostile camps.[1]

Within the definition of federalism, as given above, the balkanization process appears to have at least one meaning in the context of this paper. Leaders in various state governments as well as in the national government have developed parallel interests in power plant siting, construction, and operations over the past dozen years. Naturally leadership in the individual ORBES states had little -- if any -- interest in power plants in neighboring states until it became obvious that impacts from those facilities were being felt close to their own homes.

Environmental concerns are not the only sources of balkanization. Hostility has also come from those more interested in industrial and/or economic development. And environmental and development concerns are often linked. No one can say with any confidence just how great the influence of air quality legislation has been in producing unfavorable economic conditions -- including unemployment -- in certain ORBES states. Many feel the importance of such legislation has been exaggerated. But there are perceptions within these states that federal air quality legislation and enforcement of both federal and state regulations around the ORBES region are producing unemployment. It is often argued that the federal Clean Air Act of 1977 is the most complex legislation ever enacted by the U.S. Congress. It could also be contended that the interstate political issues surrounding air quality controversies in the ORBES states are among the most complicated domestic problems to ever challenge our federal system.

## 2.2 ORBES REGION BALKANIZATION EXAMPLE

The following chapter presents several ORBES region examples of interstate conflicts centered specifically on air quality. They all demonstrate how air pollution contributes to the phenomenon called balkanization and the potential of such conflicts for affecting the federal system. But one case of multi-state interaction involves economic considerations, as well as air quality, in a way that graphically illustrates how power plant issues can virtually pervade every aspect of life. (In this instance some of the plants in question are just outside the study region portion of an ORBES state, but coal interests in two other states are squarely within the region.)

### 2.2.1 The "Metzenbaum Amendment"

Shortly before Congress gave final approval to the Clean Air Act Amendments in 1977, an addition to the proposed legislation gave the President the power to order utilities to burn "locally or regionally available coal" under certain conditions "to prevent economic disruption or unemployment" (Section 125) in the enforcement of the law. Sponsor of the addition to the Act was U.S. Senator Howard Metzenbaum of Ohio, and the new section is now widely known as the "Metzenbaum amendment." (Congressmen from Kentucky and West Virginia have since declared that they supported this Amendment with the expectation that it would protect mining interests in their states from unreasonable competition from low-sulfur coal available to power plants from western states.)

The broad 1977 act had barely been signed by President Carter when new coalitions began to form in anticipation of a new and complex decision-making dilemma involving ORBES states as a result of the Metzenbaum amendment. Most specialists agreed that the new national air quality legislation would force Ohio power plants to greatly reduce the amount of sulfur dioxide they emit and affect interstate coal marketing in the ORBES region.

As already noted, most Ohio coal is heavily laden with sulfur, while most nearby West Virginia coal and that mined in neighboring Eastern Kentucky contains reduced amounts of sulfur. Thus, one way for Ohio utilities to reduce their emissions of sulfur dioxide and meet new national air quality standards would be to burn coal imported from Kentucky and West Virginia. Another way to meet the new standards was for utilities in Ohio to continue burning high-sulfur Ohio coal but to build expensive filtering devices called scrubbers to remove most of the sulfur dioxide. For obvious reasons, Kentucky and West Virginia coal companies, and Ohio utility companies, prefer reducing emissions by importing low-sulfur coal.

### 2.2.2 Unusual Coalitions

When the utilities announced their preference and intention to buy coal from West Virginia and Kentucky an unusual coalition led by Ohio Governor James Rhodes, United Mine Workers (UMW) leaders in Ohio, and Ohio coal operators sought to persuade President Carter to invoke the Metzenbaum amendment of the 1977 Clean Air Act cited above.

An equally-unusual alliance fought invocation of the amendment. It included representatives of Ohio utilities, congressmen from Appalachian states, and coal interests in Kentucky and West Virginia. They argued that Section 125 was in conflict with the interstate commerce clause of the U.S. Constitution. For several months in late 1978 and through much of 1979 President Carter and his aides were placed in a dilemma on the issue. A series of subsequent complex decisions involving executive, legislative, and judicial branches of government followed.

### 2.2.3 Compromise Within Federal System

Finally, On June 6, 1979, President Carter announced that he would refuse to invoke Section 125. Invoking that section, of course, would have barred the sale of Kentucky and West Virginia coal in Ohio. The President's reasoning offers an insight into decision-making in the crucible of the federal political process. Of equal significance is the plan proposed by the President to reduce the bickering among coal interests in the three ORBES states and to avoid the constitutional question noted above.

According to President Carter, he could not agree with the argument that there would be "economic disruption" in Ohio. But some of his critics argued that he was only able to issue such a refusal as a result of what White House officials insisted was a "coincidental" new ruling by the U.S. Environmental Protection Agency. EPA earlier had ordered that two coal-fired power plants to the north of the ORBES study region -- Cleveland Electric Illuminating Co. (CEI) facilities -- reduce their sulfur dioxide emissions down to a rate of 1.2 pounds per million BTU's of heat. (To do that, of course, CEI would have been forced either to build scrubbers or switch to low-sulfur out-of-state coal.)

However, apparently on the very day of the presidential announcement, EPA officials said that new studies had shown that the 1.2-pound standard was unreasonably low. It was reported by EPA that the old standard failed to consider that the two plants were located on Lake Erie, where wind and weather patterns allegedly disperse pollution.

Thus, the EPA argument apparently ran, the Cleveland plants could emit more than six pounds of sulfur dioxide per million BTU's and still not violate standards for air quality near the plant. Further, under the relaxed standard, both Cleveland plants would be able to continue burning Ohio high-sulfur coal -- reportedly about five million tons of it per year. And, of course, these plants -- which might have switched to Kentucky or West Virginia coal -- would not do so under the new EPA rule.

EPA's proposal for the two Cleveland plants awaited public comment over a period of 60 days before it became final. The agency accepted comments through August 13, 1979. During the interim, White House officials expressed the belief that, if the Cleveland proposal were finalized, there would not be enough switching to Appalachian coal by Ohio public utilities to warrant a finding of "economic disruption." The President's refusal to invoke the 1977 "local coal" clause was felt by most knowledgeable observers to mean that Ohio plants other than the two in Cleveland would be free to switch to Appalachian coal.

Ongoing debate has surrounded the Cleveland plants, particularly with reference to the possible negative impacts of long-range air pollution transport into Pennsylvania and New York. And new decisions with respect to the plants may have been made by the time this report is issued.

Though Clevelend itself is outside the ORBES study region, the decision to permit the burning of high-sulfur coal -- even if it should prove to be only temporary -- illustrates well the complexities facing the region's electric utilities and the federal system itself.

## 2.3 SPILLOVER IMPACTS

Not all interstate impacts from power plants range across so many environmental and economic interests as those associated with the Metzenbaum Amendment. Some negative impacts simply spill over from one state to another. From the earliest planning for ORBES there appeared to be agreement among interested members of Congress and EPA officials that the ORBES study should somehow present institutional[2] options which might mitigate such impacts.[3] Members of Congress sought both technical and institutional and/or organizational options from the study which might enable them and policymakers at the state level to address such interstate "spillover" impacts. The actual wording in the ORBES directive issued to the EPA in the summer of 1975 by a subcommittee of the U.S. Senate Appropriations Committee follows:

> The Committee is aware of plans in various stages of development which could lead to a concentration of power plants along the Ohio River in Ohio, Kentucky, Indiana, and Illinois. Although the environmental impact of such a concentration could be critical, the decision-making authority regarding construction of these facilities is dispersed throughout the Federal government and several state governments.
>
> The Committee directs the Environmental Protection Agency to conduct from funds appropriated in this account an assessment of the potential environmental, social, and economic impacts of the proposed concentration of power plants in the lower Ohio River Basin. This study should be comprehensive in scope, investigating the impacts from air, water, and solid residues on the natural environment and residents of the region. The study should also take into account the availability of coal and other energy sources in this region (2).

With one exception, these two paragraphs served as the blueprint for arrangements which EPA made with the university researchers to undertake the ORBES study. The single exception was a joint decision later by EPA and the subcommittee to direct the researchers to add virtually all of the State of West Virginia and the southwestern portion of Pennsylvania to the area to be examined during the final three years of the study.

Much of the remainder of this report is devoted to various types of interstate spillover impacts. Of course spillover impacts from power plants can influence various areas of life, including human health, economics, employment opportunities, crop productivity, land use, air quality, and a wide range of water-related impacts. But this paper will address only those impacts which have already resulted, or can be expected to result, in proposals for new institutional mechanisms within the context of our federal system.

After more than three years of investigation, there is virtual consensus within the ORBES core team that spillover air pollution impacts from power plants represent the most critical interstate challenges to policymakers in the ORBES study region. These have developed in part, of course, because air problem areas have no physical boundaries as do water and land. Thus, chapter 3, "Interstate Air Conflicts and Available Remedies," is devoted to interstate air problems.

Land-oriented impacts from power generation stations at times have involved two or more states. Most often, however, they are local (or intrastate) in nature. The same is true of various social impacts such as those related to labor. (For example, no dramatic movement of workers across state lines seems to be identified in any of the ORBES scenarios.)

Although relatively few nuclear power plants are located in the ORBES region their very presence and planning for nuclear power will likely influence the future shape of interstate institutions within American federalism. Chapter 6 is devoted to interstate spillover conflicts which could arise as a result of nuclear power plants.

The interstate character of the electric power industry is critical to an understanding of negative interstate spillover impacts and to the consideration of strategies to mitigate such impacts. Thus, Chapter 7 is entitled "Interstate Structure of Power Industry."

## Chapter 2

### Notes

1. The concept and the word "balkanization" itself apparently derive from a group of countries that cover a peninsula in the southeast corner of Europe. The countries are named after the Balkan Mountains in Bulgaria and Yugoslavia. The Balkan Peninsula has often been called "the powder keg of Europe" because so many wars have begun there.

2. A great deal of controversy exists among social scientists over the definition of the word "institution," and voluminous, if not helpful, literature has developed on the difference between an institution and an "organization." The terms will be utilized interchangeably in this paper with the hope that the context, and the adjectives used with the words, will reduce confusion.

3. This comment is based upon inquiries directed to the ORBES University Management Team from members of Congress and EPA officials. Of course members of Congress and EPA officials not making such inquiries could hold different expectations for the study. An effort was made to keep members of Congress from the ORBES states and appropriate EPA personnel apprised of the study's progress, but no systematic survey of their expectations was undertaken.

### References

1. Richard H. Leach, American Federalism (New York: W.W. Norton, 1970), p.1.

2. U.S. Congress, Senate Appropriations Committee, 94th Congress, 1st Sess., Senate. Department of Housing and Urban Development - Independent Agencies, Senate Report 940326, 1975.

## Chapter 3

# INTERSTATE AIR QUALITY CONFLICTS AND AVAILABLE REMEDIES

The major energy-environmental futures (or "scenarios") pursued by the ORBES researchers are based on the central assumption that, through the year 2000, coal will continue to be the dominant fuel for the generation of electricity in the ORBES region. Of course it was noted earlier that this general report on interstate relations is not based on a specific scenario. But it is relevant that analysis of all coal-dominated futures reveals that, among all impacts identified, those related to air quality offer the most potential for serious negative effects.

Tied to these air quality impacts are possible economic effects and impacts on human health. Such health impacts are a function of air pollutant concentrations, while the economic impacts are centered on such matters as the cost of air pollution control, cost of medical care for pollution-related diseases, and dollar losses associated with decreases in agricultural yields due to air pollution. It is also possible that states will engage in costly competitive activities in attracting industry and that these efforts will center around air quality questions.

For these reasons, as well as others, interstate conflict resulting from the spillover of air pollution from a source in one state to one or more states have been prominently publicized in recent months. However, it is not often understood by the general public that remedies are available for some conflicts but not for others. For that reason, this chapter emphasizes those conflicts for which such remedies are probably already available. The following chapter, "Air Quality Control Possibilities," emphasizes those interstate conflicts for which no remedies presently appear to be available and the possibilities being considered. Since these problems are both complex and controversial, it is difficult to make a sharp distinction between these two types of conflicts. Thus it is impossible to avoid some overlap in these two chapters.

## 3.1 INTERSTATE POLLUTION TRANSPORT

Air pollution conflict between two or more states centers on what is now called "pollution transport," meaning, of course, movement across state lines. There is an unfortunate tendency to lump together all air pollution movement across state lines. Such a generalization fails to highlight the most serious challenges in attempting to address interstate air quality problems in the context of American federalism.

The phenomenon of air pollution transport from one state to another is described under several names. Most ORBES researchers prefer the term "transboundary air pollution transport." To the lay person, it is often helpful to separate transboundary air pollution transport into basic types.

These are: (1) local transboundary air pollution transport, where the movement of air masses is at relatively short distances across states lines; and (2) long-range transboundary air pollution transport, where air masses travel longer distances, often involving several states.

Precise definitions for local and long-range transboundary air pollution transport are difficult, if not impossible, to provide. Lawyers, meteorologists, and other specialists involved in studying this problem understandably prefer definitions acceptable to their "guild" but which may be meaningless to the lay person.

The growing literature in this field suggests that air pollution transported across state lines is generally termed "local" if the movement is 50 kilometers (31 miles) or less. Utilizing this definition, all pollution transported across state lines for distances greater than 50 kilometers is "long-range" transport. Meteorologists point out, however, that attachment of any exact meter or mile distance to these terms is misleading, and perhaps even destructive, in efforts to understand legal and institutional relationships among the states. They take issue with efforts at precision in these definitions because, at power plants as elsewhere, the meteorology changes from hour to hour. Wind, temperature, rain and topography all contribute to the changes.

The key point in understanding interstate air pollution monitoring, according to most meteorologists, is the ability or inability at any given time to identify power plant sources. Meteorologists usually would define local and long-range pollution transport not in terms of distance but on the basis of whether the pollution can be clearly identified with a particular plant. If such source identification is possible in a particular case it is, then, convenient to term the pollution movement "local." If source identification is not possible at a given time and place, the air masses transporting pollution must be termed "long-range."

To illustrate the complexity of monitoring interstate air pollution transport within political and governmental settings, it is helpful to note that it would be possible for transboundary air pollution transport in a given area to be defined on one day as local and on the next day as long-range. (The change from one type to another, as defined here, could occur from hour to hour.) In the former instance, but not in the latter, the meteorology would permit identification of emissions as being from one particular plant.

It appears that most courts have generally found admissable as evidence monitoring data which identifies plant emissions within the 50 kilometer range. But again, meteorologists warn that on certain days this might not be possible, while on other days, in the very same spot, it might be possible to identify plant sources even up to 200 kilometers.

This complex technical discussion assumes added significance when the policymaker and the lay citizen try to understand various attempts by Congress to address interstate air quality conflicts in the Clean Air Act Amendments of 1977 (1). Although these provisions have been subject to a great deal of criticism, they do provide a legal framework in which states may seek remedies to perceived interstate inequities resulting from local transboundary pollution. (As noted below, they do not provide mechanisms for addressing long-range pollution.) Opportunities for petitioning the administrator of the U.S. EPA and for public hearings are provided for those states whose officials believe that adequate relief from transboundary pollution has not been forthcoming. Also, of course, states have the final recourse of judicial review.

## 3.2 LOCAL TRANSBOUNDARY POLLUTION

Despite the framework for addressing local pollution transport questions provided by the Clean Air Act a few protracted disputes between ORBES states over local transboundary pollution have occurred in the years since the passage of that legislation. Of the six ORBES states, only Illinois, perhaps because of boundary configurations, has avoided serious interstate conflicts in the ORBES region. Certain interstate air quality disputes have involved litigation, while others have been limited to administrative and/or regulatory arenas. The disagreements have involved both existing plants and proposed facilities.

### 3.2.1 Disputes Over Existing Plants

The basic Clean Air Act provision in such disputes is Sec. 126, "Interstate Pollution Abatement," which sets the procedures for states or a "political subdivision" to seek action against operators of existing sources in other states. This section specifically determines the process through which a governor or other official may petition the EPA administrator. At least three formal petitions have been filed with the administrator by representatives of ORBES states against neighboring states, and they are believed to represent the only formal efforts in the entire country to utilize this particular provision of Section 126.

#### 3.2.1.1 Kentucky-Clifty Creek Conflict

As a result of a petition filed by the governor of Kentucky, EPA hearings were held in July of 1979 in Louisville, Ky., to pursue the governor's claims that sulfur dioxide emissions from an Indiana plant were affecting Kentucky's efforts to comply with air quality standards in the area immediately across the Ohio River from Madison. The facility in question is the Clifty Creek plant at Madison, Ind., operated by a consortium of investor-owned companies known as the Indiana-Kentucky Electric Corporation (IKEC). EPA is now in final deliberations on the petition.

#### 3.2.1.2 Kentucky-PSI Dispute

The second instance where the interstate petition procedure of Sec. 126 has been utilized also involves a claim by a Kentucky governmental unit against a source in Indiana. In December of 1979, the Jefferson County Air Pollution Control District in Louisville petitioned the EPA administrator with the argument that the Gallagher power plant, operated in Southern Indiana by Public Service Indiana (PSI), was frustrating Kentucky efforts to maintain air quality standards and assure industrial growth in that state. At issue are sharply different clean air standards for Jefferson County, Ky. and Floyd County, Ind. Although the two counties are separated only by the Ohio River, air standards for Jefferson County are considerably stricter than those for Floyd County.

Hearings on the Gallagher plant situation were held by EPA in April of 1980, and EPA officials report that an announcement on their findings are expected soon. The Gallagher and Clifty Creek plants are separated by only about forty miles, so that any resolution of the two problems could be conceptually linked by air quality measurements and modeling of the general area.

#### 3.2.1.3 West Virginia-Sammis Petition

The final known instance of a state seeking remedy under the interstate petition provision of Section 126 is an action taken in 1978 by West Virginia against a plant in Ohio. The facility, the W.H. Sammis plant, operated by Ohio Edison Co., is located at Stratton, Ohio, across the Ohio River from New Manchester, W. Va., in the state's northern panhandle. It was believed to be the first suit in the nation filed under Section 126. Like the other two petitions noted above, no final resolution has been reported on the Sammis plant.

### 3.2.2 A Construction Permit Dispute

In addition to allowing action against existing sources the Clean Air Act also prohibits a state from approving construction of a facility whose emissions would prevent another state from attaining or maintaining national standards.

Despite the framework for addressing local transboundary pollution transport questions provided by the Clean Air Act, protracted legal conflicts between ORBES states have taken place. One of the most illustrative in revealing the complexity of local transboundary pollutant transport took place in the late 1970's; it concerned the siting of an electrical generating facility on the Indiana side of the Ohio River. Lengthy legal proceedings among Indiana, Kentucky, and the U.S. Environmental Protection Agency ensued.

The case began with the announcement by Indianapolis Power and Light Company (IPL) of its intention to build three 605 megawatt units on an 884-acre site in southeast Indiana. Located southwest of Cincinnati, about 50 miles downstream on the Ohio, the site is near the Indiana town of Patriot in Switzerland County. Across the river is Boone County, Kentucky, where the Cincinnati Gas and Electric Company and the Dayton Power and Light Company are jointly constructing their East Bend plant.

In May 1978, Kentucky officials informed EPA that their modeling results indicated that the porposed IPL plant at Patriot, in conjunction with the East Bend facility, would cause an allowable nationally-set pollutant increment to be exceeded in Kentucky. At issue was a provision in the 1977 version of the Clean Air Act which limited "significant deterioration" in certain areas of the country. The "Prevention of Significant Deterioration" (PSD) increment for sulfur dioxide allegedly would be exceeded in Kentucky by emissions from the Patriot plant.

Under Section 160 of the Clean Air Act, a PSD permit was required before IPL could begin construction at Patriot. In August 1978, taking the Kentucky modeling results into consideration, EPA Region V, headquartered in Chicago, disapproved the PSD permit application submitted by the utility. In turn, the utility company petitioned the U.S. Court of Appeals, Seventh Circuit, to review EPA's decision (2). IPL also asked the court for a temporary injunction to prevent EPA from approving permits sought by other electric utility companies in the area. Apparently, IPL feared that the EPA Region IV offices in Atlanta would grant the owners of the East Bend plant a permit to expand that facility. Such approval might have used up portions or all of the sulfur dioxide increment sought by IPL. This effort is believed to represent the first time in American history that an electric utility in one state has fought in federal court to "stake its claim" for clean air before a utility in a neighboring state could make its own claim. In October of 1978, the Court of Appeals denied IPL the temporary injunction. EPA admitted error based upon misinterpretation of modeling data submitted by the State of Kentucky, and on May 21, 1979, the court -- at EPA's suggestion -- remanded the proceedings to the agency for administrative ruling. Finally EPA reversed itself and awarded the permit. But the permit was awarded only after extensive technical arguments involving the court, EPA, both states, and the utility affected. The cost of the negotiations, in terms of both time and money, was apparently considerable to both public and private parties to the dispute. This case also shows how interstate conflicts might arise over power plant siting as sites become more scarce. Often it is cited in discussions of possible mechanisms that might both avoid such disputes and preserve air quality in a "local" two or three-state area.

### 3.2.2 Complexity of Tri-State Areas

The potential for interstate air quality conflict surrounding siting and construction or power plants and other energy-related facilities is particularly complex in a number of tri-state areas in the ORBES region. These include: (1) the immediate area surrounding West Virginia's northern "panhandle," which includes portions of that state, plus Ohio and Pennsylvania; (2) the area around Huntington, West Virginia, and Ashland, Kentucky, which includes portions of those two states, plus Ohio; and (3) the Cincinnati area, which includes portions of Ohio, Kentucky, and Indiana. In these and other interstate areas of the ORBES region, certain national structural patterns, particularly EPA's organizational structure for regulatory functions, may discourage communication among the states. The ORBES states fall into three different EPA regions: Region III (offices in Philadelphia), with jurisdiction over Pennsylvania and West Virginia; Region IV (Atlanta), with responsibility for Kentucky; and Region V (Chicago), with oversight of Illinois, Indiana, and Ohio. EPA has responded to the difficulties associated with air quality management in the Ohio River Valley and the broader ORBES region by creating a tri-regional task force. Comprised of the three regional administrators, the body's primary objective is to strengthen cooperation in meeting interstate and interregional air quality issues.

## 3.3 LONG-RANGE TRANSBOUNDARY POLLUTION

As noted above, the distinguishing characteristic of long-range transboundary air pollution is that emissions transported across state lines, although capable of being measured, cannot be identified with a particular plant. There is ambiguity within legal circles as to whether individual plant sources must be distinguished before legal actions can be brought by one state against another under the Clean Air Act. Some scholars feel that it is possible to seek action if groups of plant sources are identifiable. However, the matter has not been litigated definitively, and no consensus exists within the legal community.

Emphasis here on impacts from ORBES region power plants and approaches for addressing them should not obscure the reality that extraregional impacts are also significant in understanding overall air quality problems in the area and particularly those relating to long-range transport. The ORBES region is part of a broader "natural" region that encompasses more than one-third of the nation's land area, ranging eastward from the Misisisippi River to the Atlantic coast. In addition to the ORBES region, other sections of this broader area are important elements in the generation of electric power and in the overall air quality situation. For example, as pointed out below, it is difficult to consider air quality strategies for the ORBES region independent of the area served by the Tennessee Valley Authority (TVA). The ORBES region actually overlaps the TVA service area in portions of southern Kentucky. More important, perhaps, is the fact that air masses from the two regions mix and often move toward the northeastern United States and southwestern Canada. In a continuing dialogue, Canadian officials have informed the United States that they probably will take vigorous steps within the next five years to force this country to reduce air pollution that moves across the border into Canada.

### 3.3.1 No Present Policy

Thus, the present situation apparently is that the U.S. Congress and the courts have not yet provided the EPA with the legislative and legal foundations for setting any policy on long-range transboundary pollution transport as it has been defined in this paper. Another way of putting it is that EPA has not devised a strategy to recommend to the Congress. But a great deal of research is being carried out now in regard to this matter within various units of EPA and by their extramural contractors. Some tentative options for resolving interstate conflicts resulting form long-range transboundary pollution transport are discussed in the following chapter, "Air Quality Control Possibilities."

### 3.3.2 Northeastern States Concerned

Recent focus has also been provided to the long-range transport issue by attention given it by the northeastern states, which, because of prevailing wind patterns, experience impacts from pollutant concentrations transported from the ORBES region. Central to concerns in northeastern states and in Canada over air pollution originating in the Ohio Valley is acidic deposition, or acid rain. EPA officials have been forced to acknowledge the sensitivity between ORBES states, with their heavy use of coal, and northeastern states.

## 3.4 TYPES OF REMEDIES

To help in conceptualizing both "available" remedies to conflicts discussed in this chapter and "possible" remedies to conflicts treated in the following one, they might be categorized in the same way. Three families of remedies are suggested: (1) technical; (2) techno-organizational; and (3) miscellaneous.

### 3.4.1 Technical Approaches

The first of these, technical approaches, are generally methods that are applied at a single generating unit, with little or no attempt at inter-utility or inter-state coordination. However, as discussed elsewhere, conceivably some such approaches could be applied and coordinated on an inter-utility and/or interstate basis. Of course, even those technical approaches limited to a single plant without any possibility for interstate coordination are relevant to this discussion. Since the transport of pollutants long distances across state lines is such an important factor in overall regional air quality, even those controls limited to a single plant could reduce pollutant concentrations far beyond the source.

Among such technical approaches already in use or which have been considered for utilization in the ORBES region are these:

(1) flue gas desulfurization systems on coal-fired generating facilities.

(2) A device known within the industry as "least emissions dispatch." This is a day-to-day load management technique which puts fossil-fueled units into service in the order of least emissions of a particular pollutant, rather than least cost. Least cost dispatching is traditional utility practice, and only one company that uses least emissions, Southern California Edison, has been identified.

Individual utilities in the ORBES region apparently could initiate least emissions dispatch at their respective plants if an incentive system could somehow be devised. The effects would be greatest if this option were implemented by the large systems that operate in the region. So far as is known, least emissions dispatch has not been practiced on an interutility or interstate basis. However, as noted in the following chapter, it might be possible for electric reliability councils or other voluntary groups within the industry to encourage an interutility or interstate approach. Also, existing state public service commissions or other governmental authorities might do likewise within their respective states.

(3) Early retirement of plants. Since older coal-fired plants are generally permitted to emit more pollutants than newer plants, an earlier retirement of plants than has been practiced in the past would result in less pollution.

### 3.4.2 Techno-organizational Approaches

Techno-organizational approaches acknowledge the importance of technology but imply that in such strategies technology must be applied within an organizational context usually broader than one utility company in a single state. Most of the possibilities explored in the following chapter would appear to fit this category.

### 3.4.3 Miscellaneous Approaches

Some possible remedies to interstate conflicts (those discussed in these two chapters as well as others) do not fit conveniently into either of these groups. And in some instances, these miscellaneous possibilities appear to transcend both of the other types of approaches.

Most of the approaches discussed in these two chapters are regulatory in nature. It is also possible to use nonregulatory alternatives in efforts to improve air quality in the interstate-regional context. For example, market incentives may be used alone or to augment direct regulation. Such incentives include the use of marketable emission rights, the banking of allowable increments, the offsetting of emissions, the application of the "bubble" concept to utility systems, and emission fees. All are techniques that EPA has begun to explore, and even in some cases to implement, and apparently hopes to use increasingly.

Taxes at various levels of government can be assessed in ways which provide incentives to pollution control capable of improving air quality, both locally and regionally. Such incentives need not be limited to accelerated depreciation for "end of the pipe" control equipment, but can also include favorable tax treatment for more efficient process changes, such as coal cleaning and coal blending. Tax policies also can encourage modernization and technological innovation that address both air quality problems and developmental challenges.

# Chapter 3

## References

1. Section 110 (Implementation Plan): 110 (a) (E) (i); 126 (Interstate Pollution Abatement); and 160 (Purposes, Prevention of Significant Deterioration of Air Quality).

2. *Indianapolis Power and Light Company v. U. S. Environment Protection Agency*, Docket No. 78-2062, filed October 2, 1978.

## Chapter 4

# AIR QUALITY CONTROL POSSIBILITIES

The main question to be explored in this chapter is whether evidence exists to suggest that any air quality control approaches, other than those now in place, might be successful in mitigating negative impacts from power plant emissions which move across state lines in air masses.

Before discussing these interstate possibilities for air quality control, it is desirable to distinguish the objectives of this chapter from those of certain other chapters which also consider interstate options. The key point is that interstate air quality problems have been identified as the most serious challenge in the ORBES region and hence this chapter is devoted exclusively to air quality control. But important as air quality control may be, it is only one problem area within the multi-faceted interstate electric power system within the ORBES region.

Chapter 7, entitled "Interstate Structure of Power Industry," attempts to describe the overall interstate elements -- in addition to air quality control -- of the system as it has been structured by the industry itself. Next, chapter 8, "Non-Industry Responses: Interstate Power Options," reviews regional proposals and ideas which have been advanced -- mostly from non-industry sources -- as possible ways of making the total ORBES region power system more responsive to current interstate conditions. Finally, broader interstate organizational options which take into account all energy facilities (not just power plants) are examined in chapter 9, "Transcending Options."

As noted in the opening chapter, for more than a decade the exploration of interstate siting and operation of power plants has been carried on. For example, national legislation to create mechanisms to address these functions on an interstate basis was being considered by Congress as early as 1970. Most interstate proposals have included provisions for air quality control. However, for both technical and political reasons these proposals have not been accepted. Thus, aside from certain provisions in the Clean Air Act, as discussed in this report, almost no arrangements are available to address interstate air quality problems through siting or operational devices.

## 4.1 SITING AND OPERATIONAL CONTROLS

Possibilities for interstate power plant air quality control approaches seem to divide themselves into three basic categories: (1) siting possibilities; (2) operational possibilities; and (3) combined siting-operations possibilities. Recalling the definitions presented in the previous chapter for "local" transboundary pollution and "long-range" transboundary pollution, it appears necessary to explore each of these three approaches in the context of both local and long-range transboundary pollution.

### 4.1.1 Siting Possibilities

Interstate power plant siting alone, as an approach for mitigating air quality impacts, is considered unrealistic by some for a number of reasons. Among these is the reality that existing plants -- particularly those in operation for many years -- are producing a high percentage of today's transboundary pollution. Neither new siting arrangements nor strict enforcement of federal new source performance standards (NSPS) will affect the amount of pollutants being emitted from the older plants.

The political and organizational difficulties likely to be encountered in any effort to develop an interstate plant siting arrangement are also noted frequently as serious impediments to the development of any successful interstate siting plan. These difficulties seem likely to be substantial whether electric utilities themselves might attempt to launch a voluntary interstate siting effort or governmental efforts would be made to develop an interstate siting mechanism. Unless transboundary air pollution becomes a much more visible political issue, it will remain extremely difficult for either the utilities themselves or government units to develop the necessary organizational arrangements to implement interstate siting in the ORBES region. (Both possibilities are discussed in more detail below.)

#### 4.1.1.1 Interstate Siting and "Local" Impacts

Putting aside the political and organizational difficulties associated with possible interstate siting, what about the actual "technical" effectiveness of a siting mechanism designed to mitigate impacts from local transboundary impacts? The conclusion of ORBES research appears to be that local transboundary impacts (as defined earlier) could be reduced through interstate siting efforts. A regional siting mechanism alone could reduce pollution concentrations at local "hot spots" where these concentrations are highest. This would especially be the case at a location where two or more power plant plumes interact.

A possible trade-off, however, might be increased water consumption impacts. Under a dispersed siting situation, some generating facilities would likely be placed near headwaters of major rivers. In these locations, of course, less water is available, and water consumption could deplete some of the supply.

#### 4.1.1.2 Interstate Siting and "Long-Range" Impacts

It appears, on the basis of ORBES research, however, that interstate siting alone could not reduce total regional (interstate) pollutant "loadings." Most air quality and meteorology specialists associated with the ORBES project seem to believe that simply spreading new sites around the region would not affect long-range transboundary impacts. (But, as noted below, most of these same specialists do suggest that siting arrangements, if linked with critical operational techniques, could reduce total regional pollutant loadings.)

### 4.1.2 Operational Possibilities

Realization that a large percentage of transboundary air pollutants will come from older plants through the end of the century has dampened somewhat the enthusiasm for interstate siting possibilities felt earlier by many in the ORBES region. Consequently, attention is turning increasingly to plant operational strategies. Also adding to this attention is the growing controversy over acidic deposition, or acid rain, brought into prominence by officials in northeastern states and Canada. EPA officials have been forced to acknowledge the sensitivity between ORBES states, with their heavy use of coal, and northeastern states. Within the past few months, the EPA administrator has addressed the matter directly. As discussed in detail later in this chapter, he has indicated his preference for a "regional, multi-state approach" to begin the process of combating emissions that he believes are associated with acid deposition. (1)

The EPA administrator has not elaborated on such an approach, but one must presume that he envisages a national operational mechanism that would be administered by EPA or a similar agency. Although the acid rain phenomenon is not understood fully, increasingly it is affecting consideration of operational mechanisms designed to mitigate multi-state transboundary air pollution problems in the broadest sense.

One example of a plant operations device which might be utilized across state lines is known as "least emissions' dispatch." (2) It deals with the criterion for bringing additional plants on line as demand rises on a particular day. A least emissions dispatch policy would use the criterion of least pollution discharge rather than least cost is placing new generating units in operation. Such a policy would pass on additional costs to rate payers, but some specialists have argued that the costs are minimal if the cost of pollution impacts are factored in.

Since no utilities in the ORBES region have felt a least emissions dispatch practice to be sound policy in its own system, it seems unlikely that, without strong incentives from government at some level, two or more utilities would voluntarily implement the practice across system and state lines. Also, some utility leaders have maintained that the potential for this mitigation strategy has been exaggerated.

However, the least emissions dispatch approach does illustrate the kind of positive effect that a regionwide change in utility operations might have on air quality even under conditions of high electrical energy growth.

The notion is also suggestive of even more unusual possibilities that might be developed. Among these is the concept of differential emissions reductions, which is predicated on the idea that utility systems in concert might use a variety of devices to reduce emissions at individual plants when meterological conditions suggest that pollutant concentration hot spots are developing.

### 4.1.3 Combined Siting and Operational Controls

On the basis of ORBES research, a cautious assessment can be made that a combined strategy to determine expected emissions, site plants, and implement cooperative operational controls might improve air quality through much of the region.

It seems that the region as a whole might benefit if, somehow, a regional entity could weigh the advantages of approaches such as those taken in the various ORBES scenarios. For example, in the scenario which exports electric power outside the region, a regional body conceivably might conclude that the exports should be produced by nuclear-fueled rather than coal-fired units, thus avoiding the air quality impacts identified.

Further, as already noted above in the section on "siting possibilities," certain operational changes, when coupled with regional siting, most likely could reduce total regional loadings. To make such suggestions is not to under-estimate the problems to be faced by the utility industry if they should attempt to implement such unusual practices.

Finally, in review, given the interdependency of siting, emissions reductions, and other operational functions, it appears that interstate coordination in all these areas would be required to reduce regional pollutant loadings and/or to reduce concentrations from long-range transboundary pollution in the region and beyond. Because of the alarm being expressed in northeastern states and Canada over long-range transboundary air quality impacts from ORBES region plants, it seems likely that discussions of such interstate coordination will increase in the coming years.

Sections of this chapter have briefly addressed possible ways that power plant siting and operational control arrangements might reduce negative transboundary air quality impacts in the ORBES region. It has not, however, treated the question of specific organizational entities which could encourage the implementation of such arrangements or coordinate and/or manage the activities required. Thus, the remaining sections of the chapter are devoted to organizational aspects of interstate qir quality control possibilities.

## 4.2 VOLUNTARY OPTIONS

The least disruptive approaches -- in terms of existing organizational arrangements -- for seeking mitigation of negative air quality impacts would likely be those that could be arranged on a voluntary basis. Two distinct types of voluntary cooperation suggest themselves. First, the electric utilities themselves could voluntarily develop cooperative devices to achieve specific objectives. Second, state agencies or officials responsible for regulating the power industry in the various ORBES states could take the initiative in forming voluntary interstate mechanisms.

One rationale for such cooperation -- whether led by the utilities themselves or the states -- is that procedural difficulties and delays, as well as subsequent negative air quality impacts, might be avoided. If this reasoning is sound, it would seem to be advantageous to the utilities, state government, and the general public.

### 4.2.1 Utility Interstate Cooperation

Those favoring some form of cooperation in interstate power plant siting and operations among the utilities themselves often point out that the electric power industry does cooperate in many operational functions already. As noted in detail in chapter 7, cooperation across state lines takes such organizational forms as power pools, joint plant ownership, holding companies, and reliability arrangements. The latter type of cooperation is accomplished through the National Electric Reliability Council (NERC) and nine regional reliability councils. Through these councils, the nation's major electric power systems collect and exchange information on such matters as load projections, generating resources, and interconnected network facilities. (3) The question of why the reliability councils could not assume interstate or regional leadership in mitigating air quality impacts is increasingly being raised.

Some observers contend that it would be possible for Congress to expand existing legislation to encourage utility coordination of power plant siting across state lines and other kinds of cooperation. Such encouragement, they argue, might be in a form similar to that used by the national government to stimulate the creation of the reliability bodies following the 1965 "blackouts" in the Northeast. Thus, despite the hurdles certain to face any effort at interstate siting and other new cooperation, several bills have been introduced in the Congress which, if approved, would have urged the electric utility industry in general to create additional mechanisms.

Others believe it is unlikely that "encouragement" alone will be enough to stimulate action in the interstate siting and operational field by the reliability councils or other segments of the power industry. They point out that the councils are made up of representatives of the individual utility companies and that, according to this view, the councils do not want to appear to be seeking to become "operational" in any sense or to usurp any authority from the individual utilities.

#### 4.2.1.1 Lack of Realism?

Is it actually realistic to expect any segment of the electric power industry to provide leadership in creating cooperative mechanisms aimed at interstate air quality control? It may not be in a utility's self-interest to push for cooperative air quality control arrangements. The burdens associated with installing flue gas desulfurization devices and other anti-pollution equipment and the accompanying governmental regulations just to control local pollution have been heavy. It may be expecting too much to believe that -- even with government "encouragement" -- utilities will take on a complicated cooperative interstate air quality control responsibility voluntarily.

### 4.2.1.2 Regulatory Difficulties

If utilities in some combination of states were to agree on an arrangement for voluntary interstate siting of plants and other forms of cooperation, a method would be required for administrative and/or regulatory review of their decisions at both the federal and the state levels. At present it is difficult to envisage an acceptable structural arrangement for such review. It would seem that the Federal Energy Regulatory Commission (FERC) and either state siting agencies or public service commissions would have to be involved somehow. In the present legal and political climate, coordination in such an interstate arrangement would be extremely difficult. However, one ORBES support study considers such a plan at length.(4) It suggests the possibility of interstate identification or even acquisition of sites on an interstate regional basis. Noted is a practice initiated by the State of Maryland, which buys and "banks" future sites.

## 4.2.2 State-Initiated Cooperation

Cooperative ventures initiated by the states themselves to mitigate negative transboundary air quality impacts represent another possibility, but there is no evidence that such will develop. As discussed in chapter 8, only one major proposal in the ORBES region is known. In September 1976, the then-governor of Kentucky proposed to the governors of four other states bordering the Ohio River (all of the ORBES states except Pennsylvania) that they cooperate in the siting of power plants. However, the idea was not pursued. At present, there is apparently no governor among the ORBES states who wishes to make a case for interstate air quality control.

Further, officials of such state agencies as public service commissions, environmental protection departments, and energy units apparently communicate very little across state lines in regard to possible cooperation in power plant siting or matters relating to power plant operations, In fact, it appears to be difficult for such officials to communicate on such issues even within their own states, due in part to the complexities of such areas as operations and permit and licensing procedures associated with plant siting and construction.

Before interstate or multi-state cooperation in the mitigation of transboundary air pollution impacts could occur, legislative leaders in the various states would have to perceive these impacts as major problems.

### 4.2.2.1 A Beginning in Ohio?

In only one ORBES state, Ohio, has the legislature given its administrative leaders a clear mandate to seek interstate cooperation in developing mitigation strategies. Ohio also is the only ORBES state that, by legislation, has fashioned a "one-stop" siting procedure through which one agency has the authority to resolve all issues involving the acceptability of an electrical generating facility site (Ohio Rev. Code Ann., sec. 4906.01 et seq.). The Ohio Power Siting Commission, the lead agency through which the process operates, is made up of chief executive officers of the relevant state agencies and also includes public and legislative membership. A section of Ohio's power siting statute specifically provides for joint proceedings with other states and the federal government and for entering into interstate compacts or agreements. If the other ORBES states were to create similar commissions, there would at least be a suitable family of agencies in the ORBES region for interstate discussions on siting and operational problems.

#### 4.2.2.2 Possible Regional Regulatory Agency

Although this section is entitled "voluntary options," this appears to be the most appropriate place -- while discussing state-oriented cooperation -- to raise the possibility of some kind of regional regulatory body aimed at reducing transboundary air quality impacts in the ORBES region. As emphasized in a report prepared under contract to the Federal Energy Administration in 1976, "while the nature of bulk power supply operations is highly regional, regulation of those operations now occurs basically at the state level." (5) The idea of an interstate-regional regulatory body in the ORBES region would undoubtedly be viewed with alarm by the utility industry as well as most other sectors in the respective ORBES states. One cannot imagine any such proposal being accepted now by the various state legislatures. But communications and voluntary cooperation among the public service commissions in the ORBES states would seem to be a reasonable step.

## 4.3 THE INTERSTATE COMPACT

Another potential vehicle for mitigating negative transboundary air quality impacts is the interstate compact. The U.S. Constitution declares that "no state shall, without the consent of Congress...enter into any Agreement or Compact with another State" (art. I, sec. 10). The courts have held, however, that such congressional consent is required only when states create an organization "tending to the increase of political power in the states, which may encroach upon or interfere with the just supremacy of the United States" (Virginia v. Tennessee, 148 U.S. 503, 1893). Given the current concern over energy developments, the courts might hold that congressional approval would be required of any new interstate agreement designed to mitigate transboundary air impacts.

### 4.3.1 ORSANCO As Air Control Mechanism

Although in recent years interest has increased in the use of the interstate compact as a possible mechanism to mitigate these impacts, no serious attention has been given to such an approach in any ORBES state legislature. Legislative action is required before Congress can consider consenting to a compact. However, state commissioners of an organization established 32 years ago through interstate compact to improve water quality in the Ohio River Valley have expressed considerable interest in transboundary air problems. This organization is the Ohio River Valley Water Sanitation Commission (ORSANCO), formed when governors of the six ORBES states, plus New

York and Virginia, signed an interstate compact. Since early 1979, the possible role of ORSANCO in the development of a multistate siting entity has been under discussion. (6). Aside from urging an exploratory study on whether there is need for a new or existing organization to engage in siting activities, the ORSANCO commission has taken no formal action on establishing such a body.

### 4.3.1.1 Advance Consent Concept

Some members of ORSANCO panels believe that their compact could be modified to permit supplementary agreements, between as few as two member states, to resolve transboundary air pollution conflicts and other problems relating to interstate facility siting. Under such an agreement, the concept of "advance consent" might be exercised, thus avoiding the need to obtain congressional approval of agreements between states. ORSANCO commissioners who favor such an expansion of the organization's role have emphasized that such a plan need not interfere with siting-related steps, particularly the issuance of construction and operating permits, that now are performed by state or federal agencies. Rather, the goal would be to identify both prime siting areas and those unacceptable on the basis of multistate and regional criteria.

As a specific proposal from one former commissioner put it, an ORSANCO-based arrangement could be "applicable to the entire river valley or portions thereof adjacent to two or more states. At the very least, a permit coordination, or perhaps a multistate certification process, could be devised even if nothing more profound were done." (7)

### 4.3.1.2 Pros and Cons of ORSANCO Role

A number of advantages and disadvantages can be cited in regard to ORSANCO's role in mitigating negative air quality impacts. A major advantage is that ORSANCO is an entity already in place, and it would take years to approve a separate interstate body. However, ORSANCO is a water-related organization, while air quality probably will be the major controlling factor in operational and siting problems. Moreover, although the agency has qualified staff to carry out its present functions, the staff is limited in their air-related capabilities. Eight key states are commission members, but the commission includes neither Tennessee nor other less critical states in the broader Ohio River basin. The long-time ORSANCO constituency consists of the eight member states; industry, including the electric utilities; and municipalities. However, "newer" publics such as environmental groups that focus on coal-related air quality problems, perceive limited access to the body. Finally, ORSANCO is experienced in political affairs and interstate diplomacy and probably is capable of articulating the states' polition in conflicts with the federal government.

ORSANCO is discussed in later chapters. For example, in chapter 5, devoted to basin waterways, it is emphasized as an important water-related organization in the region. In chapter 8, dealing with broader interstate power options, its possible role as a power plant siting organization is given additional attention.

### 4.3.2 Model Outside the Region?

No interstate compact to mitigate transboundary air pollution is known to operate anywhere in the country at this time. However, the Delaware River Basin Compact has organizational elements that could be relevant in the consideration of such mechanisms for the ORBES region. The organization "has played an active role in electric energy facility siting and has been instrumental in both assisting and obtaining overall approval of sites and in discouraging the utility from mis-siting projects. " (8) An agency established by the compact has the authority to manage the water resources of the river basin without regard to political boundaries. Unlike the Ohio Basin, where the river's main stream and major tributaries provide adequate water for industrial facilities, generating facilities on the Delaware River were threatening to seriously affect the water quantity and quality of basin streams at low flow. Therefore, in 1971, the Delaware commission amended its rules to require that utilities obtain approval of water use for projects with a capacity of 100 megawatts electric or more. Although water issues were the impetus for the creation of the Delaware Compact Commission, and air quality problems are viewed as most critical in the ORBES region, the tools utilized in interstate administration of the use of water resources might suggest organizational techniques for regional management of air quality problems.

## 4.4 TVA LINKAGE TO ORBES REGION

In considering strategies to mitigate negative air quality impacts in the ORBES region, it is impossible to ignore the Tennessee Valley Authority, a federal corporation created in 1933 and a major consumer of coal among the nation's utilities. The TVA service area includes parts or all of seven states: Virginia, North Carolina, Kentucky, Tennessee, Mississippi, Alabama, and Georgia. Of these states, only Kentucky also is in the ORBES region. However, in terms of overlapping problems of long-range transboundary air pollution transport, the two regions are so interconnected as to make separate treatment almost impossible. Vital connections also are evident in at least four other areas: (1) relationships and comparisons between TVA and ORBES region utilities in providing coal-fired electric power to uranium enrichment facilities, (2) rate-making and other financial comparisons between TVA and ORBES-region utilities, (3) competition among coal suppliers in obtaining contracts with ORBES region utilities and TVA, and (4) linkages between the two regions in waterway management. Thus, it is necessary to ask whether any strategy in the ORBES region, operational or siting-oriented, could be effective without the inclusion of the six other states that, together with Kentucky, form the TVA service area.

Even casual consideration of operational and/or siting cooperation to link the ORBES and TVA areas for purposes of mitigating air impacts probably would result in emotional responses from utility leadership in both regions.

Intense ideological differences separated the early supporters of the TVA idea from the leadership of the investor-owned utilities. Although conflict has diminished somewhat over the years and the two sectors work together in such areas as electric power reliability, cooperation might be difficult to implement. However, given the increasing importance of the two areas in eastern United States air quality management, pressures might force either some form of cooperation between them or regulatory activity by a federal agency unacceptable to both.

## 4.5 OTHER REGIONAL ORGANIZATIONS

For different reasons, then, both ORSANCO and TVA will be important in discussions of multistate air quality management in the ORBES region. Probably of less significance are a number of other regional organizations.

### 4.5.1 Ohio River Basin Commission

One of these groups apparently shares with ORSANCO an interest in providing counsel on the interstate siting of power plants. This is the Ohio River Basin Commission (ORBC), a federal-state partnership composed of 11 Ohio River Basin states (including the 6 ORBES states), 9 federal agencies, and ORSANCO. ORBC was created in 1971 under Title II of the Water Resources Planning Act of 1965 (42 U.S.C. 1962). Commission spokespersons have noted that the organization may be suitable for studying siting dilemmas and possibly becoming involved in giving counsel of decisions. In developing its budget in recent years, the ORBC staff has acknowledged power plant siting problems, including transboundary air transport, and has sought funds to study associated interstate issues.

A negative factor in considering ORBC for a possible role in air quality impact mitigation is its basic organizational mission, which is limited to planning focused on water problems. Howver, the argument has been made that, in the absence of other effective organizations, the basin commission is an appropriate institution to participate in planning for future air quality management. Most of the disadvantages noted above in connection with ORSANCO's possible role in air quality affairs apply to ORBC, perhaps in a more telling fashion. In addition, leadership in certain of the states holding membership in the commission has been dissatisfied with the organization's activities. For example, the state of Ohio has withdrawn financial support. In the context of the above discussions of TVA and ORSANCO, it should be noted that, unlike ORSANCO, ORBC does include the state of Tennessee within its membership. However, TVA's status as a federal corporation, one that traditionally has functioned with few constraints from the states, probably means that Tennessee's ORBC membership is of limited importance in this regard.

### 4.5.2 Appalachian Regional Commission

A 13-state economic development-oriented organization centered in Appalachia is so tied to a continued emphasis on coal that it must be mentioned in the context of air quality concerns. This body is the Appalachian Retional Commission (ARC). It was created by Congress in 1965 under the Public Works and Economic Development Act of 1965 (42 U.S.C. 3121), with the purpose of promoting Appalachian economic development. The ARC region includes all of West Virginia; portions of three other ORBES states, Pennsylvania, Kentucky, and Ohio; and parts or all of nine other states. Because of the overlap between much of the ARC region and the TVA service area, many of the comments above in regard to TVA and the ORBES region air quality relationships apply equally to the interface between the ORBES region and the ARC area. A proposal has been made that ARC's functions be expanded so that it could address transboundary impacts in the Ohio River valley and that it perhaps become an energy facility siting body. This also would involve an expansion of the commission's region. However, this proposal finds little support in Indiana, Illinois, and Ohio, where many disagree with the ARC emphasis on economic growth.

### 4.5.3 Title V Commissions

The multistate economic development bodies known popularly as Title V commissions also should be mentioned, although no such bodies operate in the ORBES region. These commissions also are created under the Public Works and Economic Development Act of 1965. With the consent of the states included, an area may be designated a multistate economic development region and invited to establish a commission. In the last few years, the federal government has given three new entities initial commission designation; each would encompass one or more of the ORBES states. However, the role of these proposed commissions in the mitigation of transboundary air pollution impacts in unclear.

## 4.6 NATIONAL GOVERNMENT INITIATIVES

Most federal initiatives probably will center on the Clean Air Act. Since the 1977 amendments were signed, various interests with a variety of perspectives have sought to modify the act radically. Often electric utility representatives describe it as unnecessarily complex and excessively time consuming. On the other hand, environmentalists and some EPA officials characterize the Clean Air Act as ineffective in addressing troublesome problems, including multistate, long-range transboundary air pollution transport.

In August 1981, current authorization measures to fund administration of the Clean Air Act will expire. This means, in effect, that Congress soon will be reviewing the 1977 amendments. The EPA administrator has stated that the act "could be gutted if people don't pay attention to what is happening." (9) He has emphasized the problem of acidic deposition, which involves "numerous jurisdictions, existing sources, and energy issues," noting that "the Clean Air Act's primary reliance on the States is sound, but on this issue we confront one of its principal shortcomings: how to deal effectively with regional and area-wide problems involving transport over long distances, and across state and national boundaries." (10) Moreover, he has questioned seriously "whether the State Implementation Plan process -- requiring as it does a State-by-State, plant-by-plant approach -- is the best way to solve this problem in a timely fashion." He continues:

> I would personally prefer a regional, multi-state approach to the problem of total loadings -- one which would, for example, allow an entire utility system to find the most cost-effective approach to getting a percentage reduction from among a mix of all their loadings; such a system should even be flexible enough to permit trade-offs with other utility networks, This would require a change in the law. (11)

Thus, it appears likely that any new national initiatives aimed at the mitigation of transboundary air pollution impacts will focus mainly, perhaps exclusively, on mechanisms to combat the acidic deposition phenomenon.

# Chapter 4

## References

1. Douglas M. Costle, "A Law in Trouble?" remarks delivered at the annual meeting of the Air Pollution Control Association (Montreal, June 23, 1980).

2. This concept is discussed by M. R. Gent and John Lamount, "Paper No. 71-C-26-PWR-I-A," delivered at Power Industry Computer Applications Conference, 1971.

3. Most of the electric utility service in the ORBES region is coordinated by two regional councils: the East Central Area Reliability Council (ECAR) and the Mid-America Interpool Network (MAIN). See Jan L. Saper and James P. Hartnett, eds., *The Current Status of the Electric Industry in the ORBES States*, (ORBES Phase II), pp.13-18.

4. James McLaughlin, *Legal and Institutional Aspects*, ch. V, Sec. 8C.

5. *Structural Reform in the Electric Power Industry*, Prepared under contract to the Federal Energy Administration (Contract No. CO-05-50152-00), Gordian Associates, Washington, D.C., June 1976, p.45.

6. Memorandum from Kentucky Commissioner Eugene F. Mooney, chairman, Task Force on Major Facility Siting, to ORSANCO members (January 10, 1979), and Eugene F. Mooney, "Proposal to ORSANCO on Major Facilities Siting Process for Ohio River," distributed as Appendix G. at ORSANCO commission meeting (September 14, 1978).

7. Mooney, "Proposal to ORSANCO," p.3.

8. Herbert A. Howlett, "The Role of River Basin Commissions in Energy Facility Siting," paper delivered at a seminar of the Southern Governors' Conference (March 25, 1977).

9. Douglas M. Costle, "A Law in Trouble?"

10. Douglas M. Costle, "A Law in Trouble?"

11. Douglas M. Costle, "A Law in Trouble?"

# Chapter 5

# BASIN WATERWAYS IN THE FEDERAL CONTEXT

Although it is felt by most ORBES researchers that transport of air pollution across state lines will present the major institutional challenge in the generation of electric power in future years, Ohio River basin waterways remain critical in the broad federal context. The rivers are of obvious significance in providing for transportation of coal and other fuels to power plants and a wide variety of industrial installations. Less obvious, but of growing importance, are subtle but critical linkages between air and water management.

One type of such possible linkage relates to the number and frequency of "hot spot" high concentrations of air pollutants already discussed. These hot spots could be diminished by dispersed siting of new plants. Such a dispersion strategy could be achieved by locating some generating facilities near headwaters of the Ohio River's major tributaries. In these locations, of course, less water is available than on the Ohio "mainstem." Water consumption at the plants would further deplete the supply, and more dramatic impacts would result. In selecting such a siting strategy, then, the overall region would be trading off possible negative air quality impacts for potential adverse water-related effects. Thus, the emphasis by ORBES upon air impacts should not obscure the continued importance of water and the always-present possibility of increased negative water impacts.

Of course, political dynamics and the status of technology permitted state and federal officials to address interstate water problems across state lines in the Ohio basin long before interstate air pollution became so prevalent or so widely recognized.

As explained in other ORBES publication series, the region does not conform to the hydrological definition of the Ohio basin. Technically, 200 thousand square miles in fourteen states are drained by the Ohio River and its nineteen major tributaries. In addition to the six ORBES states, the drainage basin also includes portions of Tennessee, New York, North Carolina, Virginia, Maryland, Mississippi, Alabama, and Georgia. But in the minds of most the basin is associated with what is more properly called the Ohio River Valley, made up of those portions of the six ORBES states which border the river.

By the 1930's, in the words of Paul V. McNutt, then Federal security administrator, the water pollution problem in the Ohio River Valley "overshadowed that of any other drainage basin in the United States" (1). Just as the diversified sources of pollution and the many governmental agencies involved now make air quality problems difficult to approach, so were the early steps in addressing interstate pollution extremely awkward.

The region's steadily increasing industrialization and the accompanying rise in population made interstate action in controlling water pollution imperative in the thirties. Also, severe droughts in 1930 and 1934 reduced the amount of available water in the river and served to call public attention to the menace which Ohio River pollution represented to public health throughout the region.

## 5.1 HISTORY OF ORSANCO

Congress gave impetus to the growing demand for interstate action by authorizing negotiations for an interstate water sanitation compact in 1936 (2). Shortly therefore, the Ohio River Valley Water Compact Commission was formed to draft an appropriate compact document. With the help of the Council of State Governments, agreement on the terms of a compact was reached in 1938. But it was not until 1948 that the necessary number of states accepted its terms. Virginia became the last of eight states to approve the compact. Others who had approved the document were the six ORBES states, plus New York. Ninety days later, on June 30, 1948, governors of the eight states signed the compact, and it became effective. The compact does not prescribe how pollution shall be controlled. For this purpose it creates as the agent of the states the Ohio River Valley Water Sanitation Commission (ORSANCO), composed of three representatives of each state and three from tne federal government.

ORSANCO has thus been in existence for thirty-two years. A scholarly, objective work on interstate compacts, written in 1959, described ORSANCO as follows:

> The Ohio River Valley Water Sanitation Committion is set apart from most compact agencies by the fact that it is endowed by its Compact with the power to secure compliance with the standards it sets. Article X of the Compact makes it the duty of the municipality, corporation, or entity to whom the Commission issues an order to comply with it, and the Commission is given power to call on any court of general jurisdiction or on any U.S. District Court in any of the Compact states to enforce its order by mandamus, injunction, order of specific performance, or some other equally appropriate form of legal action. Ordinarily, the Commission does not deal directly with any municipality or industry regarding compliance with its orders. It has won adherence to them through its education efforts and by relying on the several pollution control agencies in the states (3).

Origins and operations of ORSANCO are particularly relevant now because of its interest in interstate power plant siting and operations, as discussed in the preceding chapter. In view of such interest on the part of ORSANCO, another quotation from the work cited above is pertinent:

> The success of the Ohio River Valley Water Sanitation Commission can be attributed to a number of factors. For one thing, it has not deviated from the work prescribed by the Compact -- pollution control. Although pollution is but one of the many problems which exist in the Ohio River Basin the Commission has steadfastly refused to be enticed by the possibilities of such problems as flood control, navigation, soil conservation, reforestation, and recreation. No doubt its way was made easier by the fact that all the party states already had an agency concerned wholly or in part with the pollution control, with which the Commission could immediately begin to work and whose efforts it could begin to bring together into a massive attack. The Commission has always been respectful of these agencies, and in return the agencies have been willing to work with the Commission. The Commission's success on the industrial side can be credited in part to the dollars and cents value of stream sanitation which the Commission demonstrated in a great many cases. Finally, the Commission's success is due to its decision to rely mainly on education and persuasion to win adherence to its standards rather than on compulsion by law. Perhaps the most important result of its work is the creation of public awareness of and interest in attacking the pollution problem throughout the valley (4).

Both advocates and critics of ORSANCO should remember that these comments were written in 1959. Although the Ohio River Valley has long been a center for the production of electric power, the possibility of ORSANCO becoming involved in interstate siting of plants or other utility-related functions certainly was not a point of contention in 1959. Of course a great many changes have occurred at all levels of government since then. Not least of these has been the establishment of the U.S. Environmental Protection Agency (in 1970). The national agency and ORSANCO obviously have different constituents to which they must be responsive, and tensions have developed between the two organizations. These tensions and other organizational dynamics surrounding ORSANCO will be discussed in chapter 7, "Organizational Structures."

## 5.2 NATIONAL DEFENSE CONSIDERATIONS

The use of the nation's total inland waterway system to maintain the nation's security has long been recognized, and recent efforts to reduce our dependence upon foreign oil only emphasizes this fact. Use of the Ohio River and its major tributaries to ship coal and other domestic fuels is a case in point. Of course the production of electric power itself -- directly related to national defense -- is dependent upon adequate supplies of water, and, as emphasized throughout ORBES documents, the region's waterways have been a vital factor in attracting electric utilities to the region.

The region also contains a vast array of other essential industrial facilities, built in the area to utilize water supplies, which would be pressed into defense production if an emergency should arise. Among these are some of the world's largest concentrations of chemical installations. As is noted in chapter 9 it now appears that the region's bountiful water supplies and massive coal resources together will attract a new coal-based synthetic fuel industry. All of these elements are tied together by the region's waterways, and any institutional conflicts among the states -- or between the states and the national government -- will affect the well-being of the residents in this area as well as the country in general.

There may be a touch of chauvinism or romance attached to assertions by ORBES region residents that the Ohio River itself has been a "lifeline" for the nation in war and peace almost from the earliest days of the country. But history bears out these assertions to a degree, and there is little to suggest that the Ohio River will be less significant for the nation in the future.

## 5.3 OHIO RIVER BOUNDARY DISPUTES

At a time when it is fashionable to discuss future energy "balkanization" of the states in the American federal system, one must assess with caution the role of the Ohio River as a boundary line for five of the six states and an ongoing boundary dispute among these states. (For its first forty miles after it is formed by the confluence of the Allegheny and the Monongahela rivers at Pittsburgh, the Ohio flows within Pennsylvania before it becomes the border between Ohio and West Virginia.) As discussed below, the Supreme Court has spoken once again in this matter, but there is some doubt whether the states will be successful in implementing the last decision of the court.

Since colonial times the Ohio River has been the source of these border disputes, and given the farcical character of some of these conflicts it is questionable whether they should be dignified with serious attempts at review or analysis. However, as the complexities of an advancing technological period confront the ORBES states, with their respective unique aspirations for producing energy, these disputes just might assume genuine significance. The siting of power plants have already produced interstate conflicts centered on the boundary issue, and if a synthetic fuel industry in the Ohio Valley becomes a reality these conflicts could intensify.

A dispute between Kentucky and Indiana over a nuclear power plant being constructed near Madison, Ind., about 30 miles upstream from Louisville, illustrates both the unique postures of the states in regard to power production preferences and the current relevance of long-time boundary disputes.

In 1975, Public Service Indiana (PSI), an investor-owned utility company based in Plainfield, Ind., (a few miles southwest of Indianapolis), announced plans to build the facility in question at a location known as Marble Hill. A host of objections were voiced almost immediately by public officials in Kentucky. These included the claim that dumping cooling water from the nuclear plant could endanger Kentuckians living downstream at Louisville and beyond. Details of the controversy are discussed in more detail in the following chapter, devoted to nuclear plants.

### 5.3.1 Kentucky Ownership Claim

The point here is that Kentucky officials have argued through the years that the state historically owned the Ohio River to the current low watermark on the Indiana side of the stream. According to Kentucky officials, this recognization has prevailed since 1792, the year in which Kentucky was awarded statehood. Formal recognition of the boundary essentially would make the river part of Kentucky. Hence such ownership, according to this view, would give Kentucky jurisdiction over all river activities except navigation (which is a federal power) and allow state officials to deny PSI authority to remove water from the river for cooling of the nuclear plant or to discharge effluent into the river. In 1978, the federal Nuclear Regulatory Commission (NRC) ruled that Kentucky did not have the authority to block construction of the Indiana nuclear facility. After an appeal to the U.S. Court of Appeals failed to reverse the NRC ruling, the Kentucky attorney general took the matter of river ownership directly to the U.S. Supreme Court in a petition filed in the fall of 1978.

The Supreme Court already had a similar question pending in a 12-year boundary suit brought against Kentucky by the State of Ohio. Kentucky's 661-mile Ohio River border is shared with the states of Ohio, Indiana, and Illinois with similar historical precedents existing for each state. Thus, it was generally expected that any decision rendered by the Supreme Court in regard to the 170-mile common boundary between Ohio and Kentucky would likewise apply to the 380-mile Kentucky-Indiana border. (Kentucky also has a common river border of 111 miles with Illinois.)

All concerned with the case acknowledged that the water level of the Ohio River has been raised by the construction of dams and that the river's banks have moved northward into Ohio and Indiana. Thus, the basic issue before the Supreme Court was whether the present boundary should be the northerly low-water mark -- now a considerable distance further to the north than in 1792 -- or whether the states should be forced to accept the 1792 border, which is now somewhere near the middle of the river.

A special master recommended late in 1979 that the Supreme Court formally rule that the existing northern shoreline boundary between Ohio and Kentucky is incorrect and that the dividing line is actually the low-water mark of the Ohio River as it existed in 1792 (5).

In his recommendation, the master said the 1792 boundary could be determined either by survey or by mutual agreement between the attorney general of Ohio and Kentucky (6). In a comment on the master's recommendation, Ohio Attorney General William J. Brown said he had "historic documents" which would aid a surveyor in determining the 1792 low-water marks. He admitted, however, that it could take considerable time to ascertain the exact dividing line between the states (7).

Much less prominence has been given to West Virginia's situation in claiming ownership of the river, but it now finds itself in the same plight as Kentucky. Under reasoning similar to that applied to Kentucky, it had been held prior to recent action that West Virginia's border extended to the northern low-water mark in its common Ohio River border with the state of Ohio.

### 5.3.2 A New Interpretation

In what could become the single court decision with the most potential for affecting future water-oriented interstate relations among the five states, the Supreme Court ruled on January 21, 1980, that the Ohio-Kentucky boundary should be fixed where it was nearly two centuries ago. This, of course, was the low-water mark on the northern shore of the river as it existed in 1792 when Kentucky was admitted to the union.

The decision in the case, Ohio v. Kentucky, dealt specifically only with a border dispute between these two states. But, as already noted, the decision was felt by all concerned to set a precedent for the similar river border dispute between Kentucky and Indiana. (The Supreme Court has indeed ruled since the January decision that the Kentucky-boundary should revert to the 1792 mark.)

In a split decision (6 to 3), the minority justices offered dissents in the Ohio-Kentucky case which suggest that the boundary problems have not been disposed of forever. In a dissent by Justice Powell, with whom Justice White Rehnquist joined, it was declared:

> This curious result frustrates the terms of the Virginia Cession of 1784 that first established the Ohio-Kentucky border, ignores Chief Justice Marshall's construction of that grant (and)...is contrary to common-law rules of riparian boundaries, and creates a largely unidentifiable border.
>
> The Ohio River must remain the border between the States and within the domain of Kentucky. The only way to ensure this result is to recognize the current low-water mark on the northern shore as the boundary.
>
> ...The Court's holding that the boundary forever remains where the low-water mark on the northern shore of the river was in 1792, regardless of the river's movements over time, may produce bizarre results.
>
> ...Sensible people could not have intended such results, which not only would mock the congressional resolution accepting Ohio into the Union as a State "bounded...on the South by the Ohio river." (2 Stat. 173 (1802).

> ...Following today's decision, all boundary matters between Ohio and Kentucky will turn on the location almost 200 years ago of the northern low-water mark of the Ohio River. This cumbersome and uncertain outcome might be justified if it were dictated by unambiguous language in the Virginia Cession. But since the Court's decision is not only unworkable but also does violence to that deed as it has been construed by this Court, I cannot agree with the Court's ruling today (8).

Thus, despite the concerns of three justices, the ruling was a victory for Ohio, Indiana, and Public Service Indiana (PSI), the utility constructing the nuclear plant at Marble Hill, Indiana.

If the view of the minority judges had prevailed, Indiana and Ohio would have lost some of their land to Kentucky. Now, however, Kentucky -- whose leaders have always contended that their state owned the entire river -- must prepare to share ownership with Ohio, Indiana, and Illinois. Of course the same is true of West Virginia, the other state South of the river, which -- as noted above -- shares it as a common border with Ohio.

Kentucky (and perhaps West Virginia) may seek a rehearing of the case. But a motion for rehearing will not be successful unless Kentucky convinces some of the justices who decided in favor of the Ohio (and Indiana) that their votes were in error. At present there appears to be little chance of this occurring.

Of course the Supreme Court's decision most certainly will nullify Kentucky's attempt to block construction of the Marble Hill plant on the ground that the plant's discharge will be into water owned by Kentucky. Now, of course, under the new ruling of the Court, the Marble Hill discharge point will be in Indiana.

Barring the Court's acceptance of a Kentucky plea for rehearing, then, Kentucky, Ohio, Indiana, Illinois, and West Virginia will be required to devise a method of determining the 1792 boundary. It could be argued, perhaps, that this costly task might provide some incentive for new interstate cooperation such as that required to stimulate joint discussions on the siting of energy facilities.

The Supreme Court decision apparently means that there must be a "double enforcement" by the five affected Ohio River states. Kentucky's argument that its River ownership justified a claim for permit granting authority over the new power plants across the river at least had the attraction of simplifying the process. Now, with the possibility that a number of synthetic fuel plants may join new power plants on both sides of the river, prospects of double enforcement conjure up thoughts of complex -- even chaotic -- permit and licensing procecures. If such does indeed occur, a plant siting "treaty" arrangement might prove attractive.

At the present, three different Corps of Engineers district offices, three EPA regional headquarters, the five states bordering the River, and the Ohio River Valley Water Sanitation Commission (ORSANCO) are in some ways involved in the decision-making process. And, the Supreme Court decision could well increase the tensions and complexities which surround the inter-agency and inter-state dynamics.

Prior to the decision, Kentucky officials had been encouraged by action of one federal agency. In a recent hearing on Indiana's Clark Maritime Center, a proposed riverport across from Jefferson County, Ky., the U.S. Army Corps of Engineers consented to receive Kentucky's testimony on the center's effect on the latter state. This was perceived in Kentucky as federal recognition of its regulatory interests along the river boundary.

However, even before the Supreme Court decision, Indiana had not felt that Kentucky deserved such recognition, Now, the question emerges whether the tangled web of jurisdictions through which power plant and synthetic fuel plant operators must move for approval of sites might become even more cumbersome.

## Chapter 5

## References

1. U.S. House Report 2653, 76th Cong., 43rd Session, 2.

2. 49 Stat. 1490 (1936).

3. Richard H. Leach and Redding S. Sugg, Jr., *The Administration of Interstate Compacts* (Baton Rouge, Louisiana: Louisiana State University Press, 1959), pp. 183-184.

4. *Ibid.*, pp. 186-187.

5. Special master in the case was U. S. District Judge Robert Van Pelt, Nebraska.

6. From a telephone conversation between Judge Van Pelt and the author, January 2, 1980.

7. "Ohio Happy with River Suit's Course," *Cincinnati Enquirer*, January 2, 1980.

8. These quotations are taken from the "Slip Opinion," issued by the Supreme Court of the United States. *Ohio vs. Kentucky* will be published later in the formal Supreme Court reports. (Case argued December 3, 1979; decided January 21, 1980.)

# Chapter 6

# NUCLEAR POWER PLANTS

Previous chapters have concentrated mainly upon interstate problems associated with siting and operation of coal-fired electric generating facilities. Of course such installations dominate the electric power industry in the ORBES region. But the few nuclear power plants in the region present significant interstate and intergovernmental issues far out of proportion to their number when compared to coal installations. In terms of both siting and operations, the nuclear plants offer interstate problems which cannot be lumped with fossil-fuel facilities. A dispute between Kentucky and Indiana over Ohio River water use for cooling a nuclear plant was noted in the previous chapter. However, a broad array of other interstate problems exist in connection with the construction and operation of nuclear plants in the ORBES region.

This chapter will review the history of siting, construction, and operation of nuclear power plants themselves in the region as related to interstate matters but will not examine those installations in the region which are associated with other phases of the nuclear fuel cycle. Interstate aspects of the operation of uranium enrichment facilities and nuclear waste disposal sites will be discussed in chapter 9, "Transcending Options."

As this is being written in the summer of 1980, considerably more than a year has passed since the accident occurred at Metropolitan Edison's Three Mile Island (TMI) plant near Harrisburg, Pa., on March 28, 1979. The TMI facility, located on the Susquanna River, is only two counties removed from the Ohio River drainage basin and the ORBES study region. The Susquanna empties into the Chesapeake Bay, not the Ohio River. But the TMI plant's location in an ORBES state and its closeness to the edge of the Ohio basin are relevant for this discussion.

The accident seems to have intensified opposition to nuclear power plants in the two ORBES states -- Kentucky and West Virginia -- which do not contain nuclear generating facilities. Of course Kentucky and West Virginia are two of the nation's leading coal producing states. Whether opposition to nuclear power in these states is based mainly on genuine fears or results from a concern that nuclear facilities might make coal less attractive (as many nuclear advocates argue) such opposition is real. However, before focusing on interstate relations in regard to nuclear power, it seems desirable to trace briefly the history of nuclear plants in the ORBES region.

## 6.1 HISTORY OF EARLY PLANTS

The first experimental nuclear power station in the country was put into operation at Shippingport, Pa. -- in Western Pennsylvania on the Ohio

River and within the ORBES region -- in 1957. The Duquesne Power Company has continually operated this facility, first for the U.S. Atomic Energy Commission, next for its successor agency (the Energy Research and Development Administration), and now for the U.S. Department of Energy (DOE). The plant is only a few miles from the heavily industrialized area of Eastern Ohio, but apparently no interstate problems matching those associated with nuclear plants in the lower Ohio Valley have developed over the 23-year life span of the facility.

The same is true of the nation's first full-scale commercial unit put on line at Dresden, Ill., by Commonwealth Edison Company, in 1960. Located near Morris, Ill., Dresden is now the site of four units. It is located in Grundy County, one of the northern-most Illinois counties included in the ORBES region and more than 200 miles from the Ohio River. As noted earlier, the ORBES study region boundaries were drawn to include Illinois coal-producing counties.

Since providing the setting for the country's "pioneer" nuclear stations, utilities in both Pennsylvania and Illinois have developed a heavier reliance on nuclear power than other ORBES states. In the ORBES portion of Pennsylvania, in addition to operating the Shippingport experimental reactor, Duquesne Power Company has also operated the commercial Beaver Valley Station, also at Shippingport, since 1977. (A second unit of this station is presently under construction.)

Commonwealth Edison, with its headquarters in Chicago and its service area encompassing most of Northern Illinois, now relies upon nuclear generating plants for about 50 percent of its power, more than any other utility in the country. In addition to the Dresden facility, Commonwealth Edison operates one other nuclear plant in the ORBES region. This is its LaSalle County facility, a short distance west of Dresden and, like Dresden, more than 200 miles from the Ohio River.

Another Illinois utility, Illinois Power, is presently constructing a nuclear plant near Clinton, DeWitt County, about 50 miles south of Dresden, but still nearly 200 miles from the Ohio River.[1] All three of these Illinois plants -- Dresden, LaSalle County, and Clinton -- are located in relatively rural areas, are 40 to 70 miles from the Indiana state line, and have not stirred interstate conflicts as have Indiana and Ohio nuclear facilities located on the Ohio River as discussed below.

### 6.1.1 Diverse Responses to Nuclear Plants

Possible explanations of the difference in community and state responses to nuclear power plants within the ORBES region and elsewhere have recently begun to interest social scientists. Apparently no convincing explanations have been developed. In the context of this paper, it is perhaps pertinent to ask why Kentucky and West Virginia leadership has generally taken a negative attitude towards use of nuclear power by neighboring states while attitudes of governmental and political leadership in other ORBES coal-producing states is less negative. Some observers have suggested that, at least in the case of Pennsylvania and Illinois, the longer experience with nuclear reactors has reduced the concerns of their residents.

Probably neither the expertise of social scientists themselves nor adequate knowledge of the ORBES region yet permits generalizations of this kind. It is even "risky" to generalize in regard to Kentucky and West Virginia always having political leaders who oppose nuclear plants. A relatively recent governor of Kentucky urged the development of nuclear energy. This was Louis Nunn, elected to a four-year term in 1967, who promoted establishment of "nuplex" centers designed to exploit both the atom and coal. Such energy centers would have exported electric power to other states. Of relevance here in terms of ongoing ORBES interstate relations is the fact that Nunn was once again the Republican nominee for governor of Kentucky in 1979. In his recent campaign, Nunn still advocated the construction of a large number of additional power plants for exporting or "wheeling" of electric power outside the state, but he emphasized the use of coal. (Nunn was defeated in the 1979 election by the Democratic nominee, John Y. Brown, Jr., who had urged that a new coal-based synthetic fuel industry be the centerpiece of Kentucky's future energy policy.)

No doubt the most that can be said in terms of anti-nuclear sentiments among the states is that Kentucky leaders have clearly been the most vocal in opposing nuclear plants. (It should not be ignored, of course, that Kentucky's unfortunate experience with a nuclear waste facility, the Maxey Flats site in Fleming County has probably influenced many residents of the state in their overall views on nuclear matters. Further complicating interstate dynamics surrounding total nuclear developments is the presence of two massive uranium enrichment facilities in the ORBES region. As discussed elsewhere, one is near Paducah, Ky., while the other is located near Portsmouth, Ohio, on the Scioto River but only a few miles upstream from the point where this stream empties into the Ohio across from northeastern Kentucky.)

### 6.1.2 Kentucky Focus on Two Facilities

The present focus of anti-nuclear sentiment in Kentucky is on two plants, one under construction in Indiana and the other in Ohio. The less controversial of the two is a nearly-completed facility on the Ohio River, near Moscow, Ohio, about 20 miles upstream from Cincinnati. Known as the Zimmer plant, the installation is operated by the Cincinnati Gas & Electric Company (CG&E), but is jointly owned by this firm and Dayton Power and Light Co., and Southern Columbus Electric Co. of Columbus, Ohio. (The latter was recently acquired by American Electric Power Company, a holding company formerly headquartered in New York City, but now in the process of moving a major part of its corporate operations to Columbus.)

Many of the general Kentucky concerns over the Zimmer plant apply equally to the Indiana Marble Hill facility cited in the previous chapter. (Details of the Kentucky opposition to Marble Hill will be discussed below.) But there are several distinct aspects to the Zimmer-Kentucky controversy. For example, Zimmer was virtually ready for operation when the TMI accident occurred in March of 1979, and Cincinnati Gas and Electric had already announced its desire to open the facility in 1980. As in the case of other nuclear plants under construction around the country, the Nuclear Regulatory Commission (NRC) suspended initial hearings on Zimmer in the wake of the TMI accident.

After the hearings on Zimmer were re-opened early in 1980, a newly-elected Kentucky attorney general, Steven Beshear (just elected the previous November), filed a motion with the NRC in early March to intervene as an "interested state" in the deliberations on CG&E's application for an operating license. The attorney general said the Zimmer plant represented an "inherent hazard" to Kentuckians (1). Beshear continued:

> The Commonwealth of Kentucky is greatly concerned about the inadequacy of emergency planning and monitoring capability for the plant...
> I am opposed to licensing of the Zimmer nuclear power plant so long as emergency plans remain inadequate to cope with accidental releases of radiation (2).

Beshear said his state had developed a list of areas across the Ohio River and within 10 miles of the plant -- including Bracken, Campbell and Pendleton counties -- where state officials believed emergency preparedness plans must be improved before an operating license should be issued. Aside from the specific areas identified for attention, Beshear said that additional plans will also be needed for Kentucky counties within a 50-mile radius of the Zimmer plant. According to him, CG&E will be expected to pay the cost of improved emergency preparedness plans in Kentucky. In the event the utility does not agree to assume such costs, the attorney general said, Kentucky will oppose the issuance of the operating license. Other objections were raised by Beshear with respect to these matters: (1) possible shipment of radioactive material to or from the Zimmer plant and particularly "inadequate" safety standards for movement of radioactive waste material by rail; (2) lack of permanent disposal sites for spent nuclear fuel; and (3) lack of an adequate plan of operation for decommissioning the plant at the end of its useful life.

## 6.2 UNIQUENESS OF MARBLE HILL

Early in 1974, Public Service Indiana (PSI), a utility with headquarters at Plainfield, Ind. (near Indianapolis), announced plans to build a nuclear power plant on the Ohio River about 10 miles southwest of Madison, Ind. (Madison is also the site of the Clifty Creek coal-fired plant discussed earlier.) The proposed facility was given the name of Marble Hill, taken from a small nearby community which once was the center of an active quarry industry. Here, there was a unique situation where the state's largest utility (but with no nuclear experience) sought to build one of the world's largest nuclear plants directly across a river -- whose ownership was under dispute -- from a portion of a state (Kentucky) already intensely opposed to nuclear power. The interstate dynamics were further compounded by the closeness, about thirty miles downstream, of Kentucky's largest city, Louisville.

It is unlikely that any electric power facility in the country -- nuclear or otherwise -- has provided a more graphic demonstration of the almost unbelievable complexities faced by a democratic system of government in attempting to manage 20th century energy affairs within a federal framework fashioned in the 18th century. Controversy surrounding the plant over the past six years of planning and partial construction encompass almost all issues which face other nuclear installations around the country. All are highly significant, but in this context only those will be discussed which relate directly to this plight faced by our federal system in dealing with increasingly critical interstate and intergovernmental problems. The previous chapter touched briefly upon the plant as an element in the Indiana-Kentucky boundary dispute, but the possible interstate lessons to be learned from Marble Hill extend far beyond that issue.

### 6.2.1 Interstate Ownership Questions

Conflict and confusion over ownership of the Marble Hill plant has revealed interstate dynamics which raise new questions about old cooperative arrangements between various sectors of the electric power industry within the federal context. Prominent among these is the relationship between an investor-owned utility and rural electric cooperatives, which are funded through loans provided by an agency of the national government.

The total ownership of the Marble Hill plant to be operated by PSI became a point of contention early in the planning process. A PSI brochure appearing in 1976 indicated that "about one-fifth of the plant's output will go to Hoosiers served by Northern Indiana Public Service Company (NIPSCO), which will have 20% ownership. Ownership of a still smaller portion of the plant and its output is yet to be determined" (3). (NIPSCO, based in Hammond, serves primarily the heavily industrial belt of Northern Indiana, including Gary.)

However, late in October of 1976, a Kentucky newspaper carried an article, which reported that NIPSCO was "thinking of pulling out" of the ownership arrangement (4). The same story reported that letters of intent for partial ownership had been signed by two rural electric cooperative entities (5). The story identified the organizations as the East Kentucky Power Cooperative, with intentions of consumating an arrangement for 8 percent ownership, and the Wabash Valley Power Association (located in Indiana), which planned to seek 7 percent ownership of the plant.

By late January of 1977, NIPSCO confirmed that it definitely had decided not to pay one-fifth of the cost for Marble Hill (6). (Over the next few weeks there were conflicting reports as to whether NIPSCO would buy an earlier-announced 20 percent of Marble Hill power or a lesser amount.) The January announcement also indicated that PSI's own share of the ownership would be increased to 75 percent and that the Wabash Valley Power Association had agreed to increase ownership percentage from 7 to 17 percent. PSI sources indicated that the East Kentucky Power Cooperative, which serves rural cooperatives in 18 Kentucky counties, was still planning to hold 8 percent ownership. However, the same story quoted an East Kentucky official who said its involvement was not certain.

Less than a week later, on January 26, 1977, three agencies of the Kentucky state government obtained a temporary restraining order in one of its own courts (Franklin Circuit Court in Frankfort, the state's capital), blocking work on the proposed plant in Indiana (7). Kentucky units were the Department of Natural Resources and Environmental Protection, the Office of the Attorney General, and the Kentucky Public Service. (Governor Carroll had given the agencies his "blessing" in seeking the court order.) Defendents were PSI, NIPSCO, the Wabash Valley Power Association, and Kentucky's own East Kentucky Power Cooperative. A long list of claims made by Kentucky are discussed below in a later section. The Supreme Court had not, of course, at this date ruled on the Ohio River ownership question, and most of the claims were based on Kentucky's argument that it owned the entire stream to Indiana's low-water mark.

A few days later (February 3), a Louisville-Jefferson County (Ky.) committee charged with challenging the Marble Hill plant recommended that three new legal approaches be utilized in the interstate conflict: (1) a ruling from the Kentucky attorney general to determine if the East Kentucky Cooperative had violated state law in joining the project without approval of its own home state public service commission; (2) possible grand jury investigation of the cooperative's action; and (3) an anti-trust review of the financing arrangements for the plant (8).

Within one week, officials of the Eastern Kentucky Cooperative announced withdrawal of their proposal to purchase 8 percent of the installation with the amount involved estimated at $120 million. Both Louisville newspapers carried extensive quotations from officials of the organization which raised questions related to both interstate relations and the particular issue of joint ownership involving a cooperative and an investor-owned company.

According to a Courier-Journal account, the cooperative's decision to withdraw had nothing to do with power or the need for power. The newspaper quoted the president of East Kentucky as blaming its withdrawal on government regulatory delays and "uncertainty about the Carter administration's policies on nuclear power and Kentucky opposition to the project" (9). One reason for the cooperative's decision, according to quotations attributed to its president, was the refusal of the Rural Electrification Administration to release funds for East Kentucky's share of the plant until all litigation was "cleared up" (10).

The Louisville Times quoted the president as maintaining that participation in the project would have put East Kentucky power, for the first time, "under the control" of the Federal Power Commission, the U.S. Nuclear Regulatory Commission, and the Public Service Commission of Indiana (11). He also noted that the organization would have continued under the supervision of both the Kentucky Public Service Commission and the national Rural Electrification Administration.

### 6.2.2 Kentucky vs. Marble Hill

The vigor with which the Commonwealth of Kentucky has opposed PSI's construction of the Marble Hill nuclear facility in Indiana probably represents one of the most striking set of interstate rivalries since the various Ohio River Valley states were brought into the union. Probably no issue in the history of the two states has bonded public officials in Kentucky so firmly against her neighbor across the Ohio River to the north. Two governors, the state's Department of Natural Resources and Environmental Protection, and the state's public service commission (now formally known as the Energy Regulatory Commission) have all joined from time to time in legal action to block continued construction of the Marble Hill facility.

As noted elsewhere, nuclear supporters in Indiana have often charged that much of the Kentucky opposition stems from a desire to market Kentucky coal for utilization in Indiana power plants, rather than a genuine fear of nuclear power on the part of Kentuckians. But regardless of the motivation, the Kentucky opposition to the facility is likely to continued indefinitely.

### 6.2.3 Responsiveness of Government Agencies

In terms of interstate relations and federal-state affairs, the Marble Hill case is likely to long stand as an example of lack of effectiveness in communications. Public hearings conducted by units of the U. S. Nuclear Regulatory Commission (NRC) have been the center of controversy in portions of Kentucky and Indiana surrounding the site over the past years. The record of governmental activity left by various hearings of NRC units during this period probably challenges those of any other nuclear facility in the country in terms of complexity and efforts of citizens to obtain information.

That record is too long to review here, and it does not touch directly upon the topic of this paper, interstate options for the future. But something of the attitudes of certain groups in the region can be gained from a statement by one residents who has followed the issue almost from the very beginning. Dr. Harold Cassidy, professor emeritus of chemistry at Yale University and a member of Save the Valley (STV), contended in March of 1977, after a set of NRC hearings: "We are led to conclude that these laborious, expensive, and time-consuming hearings are fundamentally a process of passing from a pre-determined premise to a foregone conclusion."

It would be unfortunate if the voluminous record left from NRC hearings associated with the Marble Hill facility are not examined by students of the federal system in future years. Perhaps as vividly as any siting issue in the history of the country, they disclose the plight of earnest and well-informed citizens to understand how the "fruits" of technology will affect them. The overall importance of the hearings and what they reveal about the responsiveness of our federal system cannot be exaggerated. But it will take considerable time for a genuine analysis to be made of them.

## Chapter 6

### Notes

1. The Clinton plant has received national prominence in recent months as the result of a television presentation produced on the facility by the weekly CBS program, "Sixty Minutes." In what has been widely publicized by the media, Illinois Power produced its own video response to CBS. Several national media commentators have suggested that the company's aggressive -- and apparently successful -- informational campaign in answering Sixty Minutes may well represent a significant precedent in the history of both public utilities and industry-media relations.

### References

1. News story, Louisville Courier-Journal, March 5, 1980.
2. News story, Louisville Courier-Journal, March 5, 1980.
3. Undated brochure, "Marble Hill Nuclear Station," Public Service Indiana, 100 E. Main Street, Plainfield, Ind.
4. Louisville Courier-Journal, October 22, 1976.
5. Louisville Courier-Journal, October 22, 1976.
6. Louisville Courier-Journal, January 21, 1977.
7. Louisville Courier-Journal, January 26, 1977.
8. Louisville Times, February 3, 1977.
9. Louisville Courier-Journal, February 10, 1977.
10. Louisville Courier-Journal, February 10, 1977.
11. Louisville Times, February 10, 1977.

# Chapter 7

# INTERSTATE STRUCTURE OF POWER INDUSTRY

We have examined the character of interstate impacts from electric power stations upon the region's physical environment, particularly air and water. Impacts have been examined in advance of organizational structures because of the emphasis upon impacts coming originally from the ORBES congressional mandate and retained by the ORBES core team. In such an approach it has been necessary to discuss physical systems without having defined an organizational framework. The process has been something like pouring a pie filling into a little-understood pie crust that someone else has prepared. Now it is necessary to seek an understanding of the piecrust or the broad interstate organizational structure holding the elements of the power industry together. Various academic fields would define the organizational structure in different ways. However, most political scientists would find acceptable the notion that the organizations in question are those which control the "authoritative allocation of values" (1).

On the basis of traditional definitions of American federalism (such as those discussed in chapter 2), it may initially appear simple enough to map the organizational terrain. Almost everyone knows that the U.S. Constitution theoretically delegates specific powers to the national government and reserves all others to the states. The Constitution makes no mention of electric power generation, so during its formative years the state was the major unit of government which "allocated" values with respect to power generation. In the process, electric power production became defined as a "natural" monopoly and was judged by policymakers to be best handled by public regulation. Since state legislators did not have the time to engage in the regulatory process themselves, they established public service commissions to act in their stead. The original idea was that these state commissions would regulate corporations granted charters to operate in the respective states. In early textbooks, the situation appeared simple enough.

But advances in technology, organizational ingenuity, and politics soon made obsolete such theories of electric power regulation and management. In particular, it became possible to transmit electricity over long distances. Also, interstate waterways, which became sources of hydro-electric power, became the responsibility of the national government. Electricity transmitted across state lines was judged by the courts to represent interstate commerce. And, since the Constitution does mention interstate commerce, the national government assumed partial regulatory control over certain aspects of the electric power industry. Among these is nuclear power, exceptional because of its national security characteristics.

The electric power industry differs from other regulated industries in the significant extent of direct government participation in the industry as owner and operator. Across the nation all levels of government can be found acting in such roles. As discussed in more detail below, a national government corporation, the Tennessee Valley Authority (TVA), overlaps a small portion of the ORBES region in Kentucky and includes portions of six other states.

All these interstate organization developments, plus rapidly advancing technology, shattered any orderliness which might have initially existed relative to electric power generation within our federal system. Many of these developments have been reviewed in depth in the nation's regulatory literature, and several ORBES publications cover the basic aspects of electric power-oriented organizations in the study region. These include, of course, such organizations as the individual utilities themselves, fuel interests, and state and national regulatory bodies.

What has not been so well covered in the context of the ORBES region are the implications of the growing numbers of interstate and regional organizational arrangements surrounding the broad electric power industry there. Examination of these arrangements is the primary purpose of this report.

## 7.1 THE BULK POWER SUPPLY SECTOR

The electric power industry is normally categorized into three principal areas -- generation, transmission, and distribution. But generation and transmission together are often referred to as the bulk power supply sector. The ORBES study mandate to explore the impacts of the "concentration" of power plants in the study region appears to make this sector the most relevant in this discussion of interstate elements of the electric power industry.

In the ORBES region, as elsewhere, continuing technological advances have provided incentives for closely integrated operations over larger and larger geographical areas -- including interstate areas -- in order to take advantage of economies of scale in managing the bulk power supply system. At present, it appears that differences of opinion exist among industry spokesmen, government specialists, and academic scholars as to whether fundamental limits to scale economies in generation have been reached. In fact, some argue that the larger generating units installed in recent years generally have exhibited higher forced outage rates than expected and that this suggests that limits to scale economies may have even been exceeded.

However, countering this view is the notion that there is now an added impetus by the opportunities offered through coordinated bulk power supply planning to minimize the environmental costs associated with system development.

One recent study of the industry emphasizes the advantages of larger systems:

> One concern is whether the industry is structured in such a way that it can yield maximum economies in operation. This concern centers around the degree of interconnection and coordination in the bulk power supply sector of the industry. Another concern is the effect of interconnection on the structure of regulation.

> ...The optimal degree of spatial integration in an efficient bulk power supply system is determined by the costs and benefits of interconnection. Increasing interconnection reduces reserve requirements necessary to maintain a given level of reliability, makes possible the use of larger and more efficient equipment, increases system load diversity, and enables a more global weighing of social and environmental costs. Increased size can also be expected to provide more risk diversification, purchasing and financing economies, as well as a degree of managerial expertise not available in smaller systems (2).

Yet, the benefits cited here must be weighed against increasing transmission costs, the possibility of exposing a larger area to a single system disaster, and, beyond some point, increasing costs. And there is always the matter of possible anti-competitive effects that may result from increasing system integration. Complications of interstate problems only add to the complexity. Most of these factors are very difficult to quantify. Probably the most that can be accomplished here is to alert the general reader to the opposing arguments presented with respect to enlarging the size of bulk power supply systems in the ORBES region, particularly when they cross state lines. One member of the Senate committee mandating the ORBES study expressed the hope that it would "allow everyone involved in the decision-making process about power development to share the same information, to speak the same language"(3). A considerable amount of education will be required beyond the ORBES study itself if this is to be accomplished with regard to understanding the bulk power supply sector.

The study cited above recommended that legislation be developed and enacted that would federally charter regional bulk power corporations to operate on a multistate basis and market electricity at wholesale. It argued that this approach would offer many of the advantages of both consolidation and coordination in achieving the benefits of larger systems with relatively few of the disadvantages. Further, it maintained that this would permit the industry to operate effectively on a regional basis with a minimum of interstate multi-jurisdictional conflicts, and would ensure effective regulation. Finally, it urged that legislation be enacted to achieve a closer match between the boundaries of regulation and the boundaries of bulk power supply systems. In later portions of this chapter and in the concluding chapter, this proposal will be examined in more detail. First, however, it is desirable to describe the existing interstate bulk power supply systems in the ORBES region.

## 7.2 HOLDING COMPANIES

Probably no other private organizational entity has more significance in interstate power affairs in the ORBES region than the corporate body known as the holding company. Portions of two other ORBES reports (one edited by Saper and Hartnett and the other authored by McLaughlin) particularly address the holding company as an institution (4). Here, however, the emphasis is being placed upon the unique interstate aspects of the holding company within our federal system.

The classic definition of a holding company is "any company, incorporated or unincorporated, which is in a position to control, or materially to influence, the management of one or more other companies by virtue, in part at least of its ownership of securities in the other company or companies." (5). The holding company movement developed in this country in the early 20th century, when electric power industry leaders began to effect consolidations that would make it possible to take advantage of load diversity between different areas, often in different states, and to introduce some degree of standardization in equipment and methods.

As the holding companies increasingly developed in the nineteen-twenties, they moved beyond the control of the various state public service commissions. Further, the values of the holding company technique were felt by many during that period to be offset by its abuses. Concern over inflated valuations, watered stock and feverish speculation in securities of companies -- often several steps removed from the actual operating level -- led, in 1928, to the initiation of a Federal Trade Commission investigation.

The probe disclosed that -- as a result of the holding companies -- the electric power industry was largely interstate in nature, as current was transmitted across state boundaries. Holding companies operated virtually all over the country. Out of this situation and additional investigations grew popular demands for federal regulation of holding companies and the interstate operations of electric power firms.

A series of new national laws, including the Public Utility Holding Company Act of 1935, were passed by Congress, creating a host of new agencies. The 1935 legislation provided that, within three years the "super" holding concerns were to be dissolved under the supervision of the new Securities and Exchange Commission (SEC). Thereafter holding companies were forced to limit their operations to "single integrated systems and the business directly connected with the supply of power service to consumers." Only one exception was allowed to this rule, called by its critics "the death sentence." Under this rule, a holding company could exist if it was necessary to tie together a group of operating power plants in a single region and to promote efficient operations.

From 1935 until the 1977 creation of the U.S. Department of Energy (DOE), the SEC was responsible for the electric power holding companies, while the FPC was responsible for the operating companies. In 1977, the FPC was moved into the cabinet department and renamed the Federal Energy Regulatory Commission (FERC). Certain oversight functions for holding companies were moved from the SEC to DOE.

The history of pressures leading to the passage of the 1935 Holding Company Act should in no way be construed as impugning the integrity or legal operation of the few existing electric power companies operating across state lines in the country. The history is reviewed to show one reason why the interstate aspects of the industry are not more rationally structured. The effect of the national merger policy has been to discourage large scale consolidations which might have been deemed desirable from many perspectives, including, perhaps, air quality and other environmental concerns.

It has been estimated that the percentage of the nation's capacity controlled by holding company systems has dropped from approximately 80 percent of generation to about 19 percent since the holding company legislation of 1935 (6 ). As already noted above, holding companies were not outlawed by the legislation, but the SEC has reorganized and attempted to simplify existing holding companies, limiting their operations to single, integrated, geographically contiguous systems. Three holding companies now control utilities in the ORBES systems: American Electric Power System (AEP); Allegheny Power System (APS); and General Public Utilities (GPU).

### 7.2.1 AEP and Interstate Affairs

As a holding company, AEP controls operating electric utility companies which have service areas and/or power generating facilities in four of the six ORBES states. These are Indiana, Kentucky, Ohio, and West Virginia. (Of the ORBES states, only two -- Illinois and Pennsylvania -- do not contain an AEP operating company.) AEP companies also operate in three neighboring states -- Tennessee, Virginia, and Michigan -- bringing to a total of seven the number of states in which the holding company's firms function.

Eight operating companies are included in the AEP holding company family with only two outside the ORBES study region. They are the Michigan Power Company and the Kingsport (Tenn.) Power Company.

In addition to its powerful role as a holding company controlling operating companies in four of the ORBES states, the AEP has long been a leader in stimulating various kinds of cooperation among the region's utilities. Officials of AEP provided the leadership in establishing the Ohio Valley Electric Cooperation (OVEC) discussed in other portions of this report. Subsidiaries of AEP own about 40 percent of OVEC.

#### 7.2.1.1 AEP Acquisition of Columbus and Southern

The acquisition this past year by AEP of Columbus and Southern Ohio Electric Company (C&SOE) of Columbus, Ohio, probably represents the most significant "interstate" event in the electric power industry in the ORBES region in recent years. And AEP is now in the process of moving a major portion of its corporate headquarters from New York City to Columbus.

In 1968, AEP proposed the acquisition of C&SOE through an exchange of 1.3 shares of AEP common stock for each share of C&SOE. Both AEP and C&SOE quickly filed motions urging the Security and Exchange Commission to expedite its decision concerning the acquisition. However, the SEC delayed a ruling until recently. C&SOE has often emphasized that the prolonged delay of the proceedings has restricted its financing plans over the past years.

The record of the review by the SEC and other government agencies of the AEP request to acquire C&SOE is probably one of the most extensive of any carried out since the 1935 Holding Company Act was enacted. As such, the record contains detailed information on interstate utility dynamics in the ORBES region. It reveals that in purely physical terms (generating capacity and quantity of electric power sold), AEP is the largest investor-owned utility in the nation. In financial terms (value of assets and amount of revenues), three other utility systems are larger than AEP ( 7 ).

The SEC describes the AEP system as follows:

> AEP's service area is largely rural and small-town. The largest community served is Fort Wayne, Indiana, with a population of some 180,000* Because AEP does not serve any large city, it can do more with a dollar of capital investment than a metropolitan system which is subject to greater environmental requirements. Much of AEP's business comes from bulk power sales to industrial customers and to distributors of electric power whose own generating capacity is insufficient to satisfy their demand. Over the years, AEP has grown and flourished on this business. Because of the economic geography of its system, its bulk power and its acknowledged efficiency, AEP's rates, over the years, have been the lowest of any other investor-owned utility in Ohio ( 8 ).

### 7.2.1.2 Acquisition and Integration Standards --

Various provisions of the 1935 Holding Company Act were designed to prevent a recurrence of the practices which gave rise to the Act. Among those practices was the acquisition and control of large interstate and multistate areas of the country by holding companies even when the areas were not naturally integrated.

In this regard, however, the SEC decided that "it is undisputed...that adding C&SOE to the AEP system meets the criteria of Section 2(a)(29)(A)" (9). It continued:

> (1) The electric utility systems of C&SOE and AEP are geographically contiguous, would be physically interconnected and are capable of being operated as a single system.
>
> (2) The combined system would operate within a single area or region ( 10).

---

*Fort Wayne is located at the northernmost edge of the ORBES region.

This positive review by the SEC does not mean there was no opposition to the acquisition of C&SOE by AEP. In fact, SEC staff recommended to the Commission that the request be denied. Also, a great deal of intra-state opposition to the acquisition came from other utilities in the State of Ohio. Much of the Ohio intra-state opposition is too complex and perhaps not extremely relevant for this discussion. However, one aspect of the claims by Ohio utilities does seem relevant in this treatment of interstate utility relations.

Through the years, C&SOE had developed a "pooling" relationship with two other utilities operating in the same general area of Ohio. They are Cincinnati Gas and Electric Company (CGE) and the Dayton Power and Light Company (DPL), which are both combination gas and electric companies. At the request of CGE and DPL the SEC was faced with making a judgement of whether a strengthened intra-state electric utility pool (made up of C&SOE, CGE and DPL) might provide adequate economies of scale offered by modern technology. Those holding this view argued that C&SOE could thus obtain all the advantages of joining with AEP while preserving its independence from a large interstate holding company. Comments in an SEC approval document appear relevant for the ORBES study:

> The pooling issue is one aspect of the major debate, referred to above, as to what should be the future structure of the electric utility industry. We will not undertake to resolve these issues since they are beyond our mandate in this case and becuase they are within the province of the Congress and the Department of Energy. It is enough for present purposes to conclude that the concept of an integrated public-utility system mandated by the Act has not been superseded by the development of pooling.
>
> In any event, as explained below, we do not believe that the pool as presently constituted can provide C&SOE with the potential economies and efficiencies anticipated by its affiliation with AEP (11).

### 7.2.2 APS in the Interstate Context

The second holding company with operating utilities in the ORBES region is the Allegheny Power System, Inc. Two of its three operating companies -- the West Penn Company and the Monongahela Power Company -- are located in the ORBES region (in Pennsylvania and West Virginia). The third, the Potomac Edison, is located on the periphery of the region, in Eastern West Virginia.

Public attention was focused upon the Allegheny System and its interstate and multi-state characteristics when a scaffold accident at a Monongahela Power Company plant near Willow Island, W. Va., claimed the lives of 51 workers in April of 1978. Like AEP (at that time), the Allegheny System maintains its corporate headquarters in New York City. So-called "absentee" management in New York became a source of criticism in some quarters -- particularly around the West Virginia site -- after the 1978 tragedy.

Headquarters for Monongahela Power are in Fairmont, West Virginia; West Penn maintains its central offices in Greensburg, Pennsylvania; and Potomac Edison operates from Hagerstown, Maryland.

### 7.2.3 GPU, TMI, and the ORBES Region

On March 28, 1979, the name of the third holding company with a presence in the ORBES study region became prominently known as a result of one of the most dramatic events in the history of the American electric power industry. On that date, the widely-publicized accident occurred at the Three Miled Island (TMI) nuclear plant operated near Harrisburg, Pa., by Metropolitan Edison Company (Met Ed), a subsidiary of General Public Utilities (GPU). Though Met Ed does not provide power to communities in the ORBES region, its service area is only one county removed from the region. The "interstate" significance of the accident at Met Ed's facility was so pervasive as to transcend "study" regions and indeed all elements of the nation's electric power industry.

The other two GPU operating subsidiaries are Pennsylvania Electric Company, whose service area does reach into the ORBES region (with headquarters in Johnstown, Pennsylvania), and the Jersey Central Power and Light Company (headquarters in Morristown, New Jersey). All three GPU subsidiaries are linked together in the ownership of the TMI facility.

## 7.3 THE POWER POOL

A less formal device than the holding company for sharing power both within a state and across states in the operation of bulk power supply systems is the power "pool." By definition, "a power pool consists of two or more utilities which are interconnected on a formal contractual basis to plan and operate their combined power supply in the most reliable and economical manner for their combined load and maintenance requirements" (12). The earlier discussion of AEP and its acquisition includes a brief comparison of the distinct characteristics of a holding company and a power pool.

Examination of interstate power pool arrangements in the ORBES region seems to explain in part why some utility spokesmen have expressed reservations over the method used by ORBES researchers in determining the boundaries of the study region and in the frequent utilization of the concept of power "exports". This interstate contractual sharing of power by utilities both inside and outside the ORBES region illustrates the difficulty of describing the region meaningfully in terms of power production and transmission.

### 7.3.1 Power Pool Arrangements in ORBES Region

Various lists of power pool arrangements in the ORBES region are inconsistent with one another since various definitions exist with respect to "pools." For example, as noted above, the SEC described the cooperative relationships among C&SOE, CGE, and DPL as a pool. However, the inventory of pools included in a basic ORBES document omits this Ohio arrangement and includes only three such formal pool arrangements in the ORBES region.

They are: (1) Central Area Power Coordinating Group (CAPCO), which includes the Cleveland Electric Illumination Co., the Duquesne Light Co., (Pittsburgh), the Ohio Edison Co, (Akron), the Pennsylvania Power Company (New Castle), and the Toledo Edison Co.; (2) PJM Interconnection (PJM), made up of General Public Utilities (GPU); Pennsylvania Power and Light Co. (Allentown), Philadelphia Electric Co., and United Gas Improvement Corporation (Philadelphia); and (3) Illinois-Missouri Pool (IMP), comprised of the Central Illinois Public Service Co. (Springfield); the Illinois Power Co. (Decatur); and the Union Electric Co. (St. Louis, Mo.). (13).

However, one of these pools, the IMP, apparently does not share through the actual "dispatching" of power from individual plants. Rather, it is generally described by spokesmen for its member companies as a loosely-linked arrangement which permits the two Illinois utilities and the Missouri company to cooperate on general electric power reliability matters in their relationships with the Mid-America Interpool Network (MAIN), one of nine regional councils discussed in more detail below.

As noted above, definitions vary as to what types of cooperative arrangements among electric utilities should be termed a "pool." The key words in the definition presented above seem to be "interconnected on a formal contractual basis." The definition does not include joint ownership of generating plants as a necessary requirement for a pool. Yet many companies which have joined together to share power actually own generating plants jointly also.

### 7.3.2 CAPCO: An Example

One example of a pool entity in which the members own plants as "tenants in common" is the Central Area Power Coordinating Group (CAPCO), which, as noted above, includes five companies. CAPCO also provides appropriate examples of the interstate and regional complexity associated with pooling. Finally, it also illustrates the difficulty of distinguishing and/or estimating the power actually generated or consumed in the ORBES region.

Apparently, each generating unit planned and constructed by the five "member" companies of CAPCO in recent years has been owned jointly by at least two and usually all of the members as tenants in common. Their officers feel that economies of scale are possible because the group can install larger generating units than any one member could build and use on its own. (Latest publications of CAPCO report that currently eight large generating units are planned or being constructed under CAPCO auspices.)

Service areas of two of the five CAPCO companies, the Duquesne Light Co. and the Pennsylvania Power Company, are totally in the ORBES region. However, the latter, is a totally-owned subsidiary of still another CAPCO company, Ohio Edison, operating entirely in the neighboring state of Ohio.

While a part of Ohio Edison's service area is located in the ORBES region, a large portion is outside the study region's boundaries. The service area of one of the two remaining Ohio companies within CAPCO, Cleveland Electric Illuminating Co., is entirely outside the ORBES region. And only a small portion of the service area of the remaining CAPCO member, Toledo Edison Co., is within the ORBES region.

### 7.3.2.1 Artificial Boundary Line

The dividing line between the Ohio Edison service area in Eastern Ohio and that of its subsidiary, Pennsylvania Power, in Western Pennsylvania, is the straight line probably drawn nearly 175 years ago by a long-forgotten surveyor. Obviously the line between the states has legal meaning for some purposes. But it is an expensive and artificial line in virtually every sector of bulk power supply, including environmental control.

The advantages of economy of scale afforded Ohio Edison and its subsidiary, Pennsylvania Power, would appear to be thwarted as they must face scores of changing regulations at the national level and at the level of Ohio and Pennsylvania. It would seem that customers of both utilities ultimately bear the burdens imposed by the artificial state line. For example, important changes in state regulatory policy affecting the structure of electric rates occured in both Pennsylvania and Ohio in 1978. Customers and the general public must surely find it nearly impossible to understand the complex organizational arrangements made necessary by the boundary line drawn long before Thomas Edison first placed his first power plant into operation.

### 7.3.2.2 Legal Entanglements Faced by CAPCO

Most of the literature on pooling arrangements -- even from sources generally critical of the utility industry -- are sympathetic to the notion of cooperation in the bulk power supply sector. Yet the legal entanglements increasingly facing utilities joined in pooling efforts illustrate something of the difficulties faced by those companies attempting to cooperate across state lines. A few examples taken just from CAPCO operations over a two to three year period appear to make the point:

> On August 2, 1978, the national government began legal proceedings against Ohio Edison and Duquesne Light Company (as co-owners of the Sammis Unit No. 7) in the U.S. District Court for the Southern District of Ohio (Eastern Division) under the Clean Air Act. The government asked the Court to assess "appropriate," but unspecified civil penalties for allegedly continuing violations of particulate emission regulations which were the subject of a notice of violation from the U.S. Environmental Protection Agency (EPA).
>
> In 1975, the City of Cleveland, filed a complaint in the U.S. District Court against all CAPCO member companies

> (in both Ohio and Pennsylvania) alleging violations by the defendants of Sections 1 and 2 of the Sherman Act to restrain and monopolize trade with respect to dealing with the City of Cleveland.
>
> In July of 1977, the Borough of Shippingport (Pa.) filed actions in the Beaver County (Pa.) court of Common Pleas against all CAPCO companies, seeking to enjoin the operation of the Bruce Mansfield Plant and the Beaver Valley Unit No. 1, and to obtain damages because of alleged operational malfunctions of the flue gas desulphurization system at the Bruce Mansfield Plant.
>
> A complaint dated October 3, 1977, was filed against Pennsylvania Power in the U.S. District Court for the Western District of Pennsylvania, by Boroughs of Ellwood City and Grove City, Pa., alleging that Pennsylvania Power individually and "in conspiracy" with other CAPCO companies had violated Sections 4 and 14 of the Clayton Act to restrain and monopolize trade and commerce in alleged markets for electric power (14).

It should be noted that these examples come from reports supplied by a CAPCO member, Ohio Edison Co. Also, it may be that the CAPCO companies, individually and collectively, are guilty of one or more of all charges listed here. But certainly the scope of legal complexities of the set of charges facing a power pool group in an area embracing only two states would surely give pause to environmentalists and utility supporters alike. The social and economic costs of exploring such real or perceived problems on a piece-meal basis must be great.

## 7.4 JOINT OWNERSHIP

The matter of joint utility ownership of plants has been noticed as a secondary point in earlier discussions centered on other concepts. But the idea of power sharing across state lines through joint plant ownership, aside from other organizational arrangements, deserves additional attention.

The expectation, in joint ownership of plants, is that the financial burden for all owners will be eased in such a situation, whether the cooperating utilities are located in the same state or in two or more states. The device theoretically provides smaller utilities with an economical source of new generating capacity. All jointly operated plants in the ORBES states are identified in a separate document (15).

An example of the complexities of interstate ownership of individual power plants surfaced just as this report was being completed. The latest development in an interstate dispute occurred on August 29 (1980) when the Kentucky Court of Appeals called into question ownership participation by Kentucky Power Co., in a generating plan in Rockport, Ind. Ironically, the plant being constructed at Rockfort, across the Ohio River from Owensboro, Ky., by Indiana and Michigan Electric Co., is a sister company of Kentucky Power in the American Electric Power System.

The ruling thwarted an earlier Franklin Circuit Court (a Kentucky court) that would have permitted Kentucky Power to acquire 15 percent of the 2,600-megawatt coal-fired plant. The Court of Appeals returned the matter to the Kentucky Energy Regulatory Commission, which had first denied Kentucky Power's involvement in the project in late 1978. The utility had appealed the decision to Franklin Circuit Court, and the energy commission then appealed the circuit court's ruling to the Court of Appeals.

At this point it is difficult to know whether there are substantive policy implications involved or whether the dispute is merely centered around legal technicalities. But a review of the case illustrates the difficulties which citizens confront in their attempts to understate the interstate aspect of power generation in the ORBES region, particularly when joint ownership is involved.

A Kentucky Power spokesman reported the company may appeal the decision further. In a prepared statement, the utility called the ruling "a blow to our customers" that, if not altered, would "result in substantially higher electric rates in the future" (16). In its original decision, the Kentucky commission found that the utility could serve the power needs of its customers by obtaining power from other utilities in the AEP system, without buying a share of the Rockport Plant. The commission also indicated that it took into consideration Kentucky Power's plans to build a large generating plant this decade in Lewis County, Ky., in the Eastern part of the state.

The interstate dynamics are the most pertinent for this chapter. And the growing overall complexity of the search for economies of scale is revealed by these conditions which show a regulatory body and two levels of the judicial system in dispute within one state (Kentucky) over a company's participation as joint owners of a plant being constructed in another state (Indiana). From the current public record, there is no evidence whether the public service commission in Indiana (or the courts there) have been involved in the controversy. Of course the matter is further compounded by the fact that the holding company to which both companies belong, AEP, apparently believes that joint ownership would be advantageous to all parties, including the utilities' customers.

In chapter 6, of course, a discussion was included on the efforts of forces in Kentucky to prevent the East Kentucky Power Cooperative from becoming joint owner of the Marble Hill nuclear facility with PSI. Some observers view these various developments as further evidence of interstate "balkanization" along the Ohio River. On the other hand, they may be totally coincidental. In any case, the situations would seem to support long-term consideration of interstate-regional regulatory communications among the states. If such efforts would fail, it appears that the call for a regional regulatory body of some sort, mentioned elsewhere, will gain additional support.

## 7.5 RELIABILITY COUNCILS

Bodies known as reliability councils are among the most important interstate bodies which have been formed by the electric utilities themselves. The National Electric Reliability Council (NERC) was formed voluntarily (but with encouragement from the national government) in 1968 following blackouts in the Northeast in 1965 and 1967. It was incorporated in 1975. NERC helps coordinate the efforts to augment the reliability and adequacy of bulk supply of the electric utility systems in North America. NERC, in turn, consists of nine regional councils whose memberships comprise essentially all of the electric utility systems in the United States and several Canadian systems.

The basic structural character of NERC and the regional councils is described in the ORBES document on the structure of the electric utility industry (17). As described there, the six states include sections of five reliability council regions. The regional reliability council apparently is an administrative body representing groups of utilities from a specific region.

Most important for the paper is the often-raised question of whether the reliability councils in the ORBES region could somehow become an interstate entity responsible for coordinating cooperation in such areas such as siting and utility operations beyond reliability matters. Officers of utilities in the ORBES region have explained "anonymously" that leadership in the reliability councils are likely to be reluctant to assume such a task. Apparently the councils are truly viewed within the industry as merely expediters in technical reliability matters, and there is reportedly a concern within the electric power industry that they might enter areas which appear to give them responsibilities in functions such as siting and broad operational affairs.

## 7.6 OTHER POWER CONSORTIA

The above categories of interstate cooperation by electric utilities in the production and transmission of electric power across state lines cannot include all the various miscellaneous arrangements which have been devised for joint activities. There are a number of other interstate "consortia" and other joint ventures which have already been mentioned in parts of this report and others which cannot be described in detail.

One of considerable importance which has been mentioned in passing on more than one occasion is the Ohio Valley Electric Corporation (OVEC), created in the mid-1950's under the leadership of AEP. Its purpose is to allow fifteen investor-owned utilities in the Ohio Valley area to jointly produce electric power for the U.S. Department of Energy (DOE) uranium enrichment plant near Portsmouth, Ohio. OVEC and its subsidiary, the Indiana-Kentucky Electric Corporation (IKEC) operate generating stations at Kyger Creek, Ohio, and Clifty Creek, Ind., to supply electric power for the DOE's uranium enrichment plant near Portsmouth, Ohio.

Investor-owned utilities from all ORBES states except Illinois share in the ownership of OVEC and its subsidiary. As mentioned earlier, AEP companies reportedly own about 40 percent of OVEC.

A similar interstate arrangement permits another investor-owned consortium to supply half of the necessary power to operate DOE's enrichment plant in Paducah, Kentucky. This company is known as Electric Energy, Inc., (EEI) and operates a plant at Joppa, Ill. Four utilities, two from Illinois and one each from Kentucky and Missouri, jointly own EEI. They are: Illinois Power (20 percent); Central Illinois Public Service Co. (20 percent); Kentucky Utilities (20 percent); and the Union Electric Company of Missouri (40 percent).

The Tennessee Valley Authority (TVA) supplies the remaining power for the Paducah enrichment plant.

## Chapter 7

## References

1. David Easton, *The Political System* (New York: Knopf, 1953).

2. Gordian Associates, "Structural Reform in the Electric Power Industry" (Prepared under contract to the Federal Energy Administration, Contract No. CO-05-50152-00), 1976, pp. 28-29.)

3. News release issued by the Office of U. S. Senator Birch Bayh, July 22, 1975.

4. Jan L. Saper and James P. Hartnett (eds.), *The Current Status of the Electric Utility Industry in the Ohio River Basin Energy Study States*, and James A. McLaughlin, *Legal and Institutional Aspects of Interstate Power Plant Development in the Ohio River Basin Energy Study Region*.

5. Martin T. Farris, *Public Utilities* (Houghton Mifflin, Boston, 1973), p. 140.

6. Gordian Associates, "Structural Reform in the Electric Power Industry," p. 9.

7. Securities and Exchange Commission, "In the Matter of American Electric Power Company, Inc.," (70-4596), Administrative Proceeding File No. 3-1476, Release No. 20633/July 21, 1978), p. 4. (According to this report, one of the three utility systems larger in assets and amount of revenues is the Southern Company, also registered with the SEC under the Holding Company Act. The other two, Pacific Gas & Electric Company and Consolidated Edison Company, are independent operating companies.)

8. *Ibid*.

9. *Ibid*., p. 9.

10. *Ibid*.

11. *Ibid*., p. 15.

12. Saper and Hartnett, p. 13.

13. *Ibid*., p. 14.

14. *Ohio Edison 1978 Annual Report*, pp. 34 and 35.

15. Steven D. Jansen, *Electrical Generating Unit Inventory, 1976-1986*.

16. Pam Luecke, "Ruling Leaves Utility's Action in Question," Louisville *Courier-Journal*, August 30, 1980.

17. Saper and Hartnett, p. 13-18.

## Chapter 8

## NON-INDUSTRY RESPONSES: INTERSTATE POWER OPTIONS

The previous chapter reveals that the interstate structure of the electric utilities in the ORBES area represents, in effect, a regionalization of the power industry. It has been estimated that the investor-owned utilities in the six ORBES states (not just the portions in the ORBES region) produce approximately 90 percent of the electric power in those states (1). But the total regionalization in both the ORBES region and in the states as a whole includes public elements and cooperatives, which have both public and private characteristics.

Probably in most -- if not all instances -- this regionalization of electric power has resulted from the encouragement or even at the direction of national policymakers. From almost every perspective regionalization of electric power makes sense. It is apparently technically sound to do so. A host of other supporting factors could be listed.

Both the national governments and the states have made limited efforts to "keep up" with this development. New national legislation recognizes it, and a few state legislatures have mandated appropriate agencies to cooperate with their counterparts across state lines. For example, such a provision is provided in the legislation creating the Ohio Power Siting Commission. But for the most part, both technical complexity and the pressure of other governmental problems have kept policymakers at either the national or state level from staying abreast of the industry's expanding regional character.

### 8.1 PUBLIC CONFUSION

And if the full-time policymaker has difficulty in understanding electric power production, particularly these emerging regional phenomena, the average citizen -- if even barely aware of the complexity of the situation -- is most often bewildered by it all. To make such an observation is not to criticize the electric power industry. One could probably seize upon the problems of any other industry or area of life in the country and make a similar statement about it. For example, in comparison to health care systems, judicial and law enforcement systems, and transportation systems -- to mention only a few areas -- the electric power industry is probably doing relatively well in informing the public of its activities, including what is cited above as "regionalization".

However, to ignore the complexity of the interstate character of electric power operations in the face of the apparent intent of the mandating U.S. Senate committee would seem irresponsible. Expectations of some members of the Senate appeared to center on the development of regional electric power generation information which "citizens" might understand and use in participating in the decision-making process themselves. In a press release issued shortly after the ORBES mandate was issued to EPA, one senator declared:

> This study will allow everyone involved in the decision-making process about power development to share the same information, to speak the same language. It will give a much clearer picture of which offices are responsible for which decisions. It will go a long way toward putting the individual concerned citizen on an equal footing with the state and federal agencies and the power companies. We need adequate power supplies. But we need to protect ourselves and our environment, and that can't happen unless the citizens of our communities play an active, informed role in the decision-making process about energy development (2).

It is quite possible that the senator's expectation of the ORBES study, allowing "everyone involved in the decision-making process of power developments to share the same information, to speak the same language," has not been realized. Further, it likely does not, in his words, "go a long way toward putting the individual concerned citizen on an equal footing with the state and federal agencies and the power companies." Hopefully it has gone a short distance toward his objective. Why no farther?

### 8.1.1 Disagreement Among Specialists

It is difficult to describe the operation of a technical system to citizens, or "lay" persons, when even the designers, operators, and regulators of the system fail to fully understand it. With regard to the interstate characteristics of generation and transmission of electric power, there appears to be honest differences of opinion among recognized experts on many aspects of the subject. The understandable desire of the national government, since the northeastern blackout of 1965, to encourage the utilities to strengthen interconnections across state lines -- and even into Canada -- has brought what is an effective reliability system but one which is almost impossible to explain to the "average citizen." Recent national legislation requires that various guidelines be developed in regard to operation of interstate electric power interconnections. During discussions among utility reliability specialists and various national agencies such as the Department of Energy (DOE) to develop such guidelines, problems have apparently developed in interpreting the meaning of such legislation in the context of interstate matters.

When technical and legal specialists who have spent lifetimes studying these matters find it difficult to reach agreement, the senator's "individual concerned citizen" must indeed feel bewildered. When the operation of "big technology" produces such complicated disagreements among specialists, interest groups tend to suspect conspiracy. Some critics of electric utilities in the ORBES region have charged collusion -- if not conspiracy -- on the part of utilities. ORBES research does not appear to identify any such extreme "wrongdoing." But a great deal of confusion and conflicting interpretations among specialists leads to the conclusion that many of the interstate techno-legal-organizational arrangements among the utilities have raced ahead of the ability of the appropriate state and national institutions to regulate them within our federal system.

A critical relationship exists between electric power and every citizen in the ORBES region and in the entire country. Its function as a "lifeline" for all, plus its growing economic burdens, could well bring political pressures forcing all appropriate parties -- utilities officers, government officials, and students of the area -- to interpret with more precision the interstate operations of electric utilities.

### 8.1.2 The Export Question

Of course the concern of some residents of the Ohio Valley that their region was destined to become a "sacrifice" area for exporting electric power across state lines played a major role in the origins of the ORBES study. These concerns have not been satisfied, and the emotional conflicts over the export question are destined to continue.

The complications surrounding the so-called "export question" illustrate well the extent of the complexity of interstate transmission of electric power. It is tempting here to use the phrase "interstate generation" of electric power. Of course, the generation of power occurs at a specific site which -- unless a generating unit were to straddle a line between two states -- is located in a single state. But once the electric current surges into a utility's transmission lines and instantaneously moves on to the increasing number of interstate grids, there is apparently no way to determine the source of the power.

This reality is apparently the reason so many utility leaders argue that the concept of "electric power export" is really meaningless. (There is no way to attach "tracers" to electric current.) Power export may be meaningless technologically, but politically the concept is developing increasing relevance. Failure of utility leaders and government officials to devise more effective conceptual explanations and more creative institutional arrangements which address perceived interstate and inter-region inequities is destined to worsen an already-serious gap between those who manage technology and those who could destroy it with their political power.

### 8.1.3 Linkage of Export and Air Quality Issues

A major perceived inequity, as discussed throughout this paper, is air pollution produced locally by a plant which is transmitting much -- or all -- of the power generated to communities many miles away. Residents living near such plants, particularly in the area between Louisville and Cincinnati, have often argued that it is unfair for them to suffer the abuses of air pollution when the distant communities receive the benefits of the power.

The complexities of air quality management have already been discussed. But many of these complexities were not fully appreciated in the early seventies when concern over air quality was mounting in the Louisville to Cincinnati stretch of the Ohio Valley. When the many issues surrounding air quality, export of power, nuclear power plants, and the regionalization of electric power first became recognized by residents and political leaders in that area, there was a feeling among many that an interstate mechanism for siting new power plants was a realistic way to attack the problem.

## 8.2 KENTUCKY INTERSTATE SITING PROPOSAL

By the time EPA announced grants to universities to carry out the ORBES study late in August of 1976, the idea of a regional siting arrangement for new power plants was being discussed by officials in several of the ORBES states and by leadership in various environmental groups.

However, only one governor in an ORBES state has formally invited his counterparts in other Ohio River states to join in the development of such an interstate device. Such an invitation was issued by Kentucky Governor Julian M. Carroll at a press conference conducted on September 23, 1976. (Carroll served as Kentucky governor from late 1974 until December, 1979.)[1] As a former utility attorney, Carroll was familiar with broad problems associated with power plants, and he often addressed siting issues, particlarly during his early years as governor.

At the 1976 press conference, Governor Carroll described his proposal as a "Regional Power Plan." Speaking to a group of reporters including journalists from several other states,Carroll revealed that he had asked governors of Indiana, Illinois, West Virginia, and Ohio -- plus the chairman of the Tennessee Valley Authority (TVA) -- to join him in designing the Regional Power Plan. The sixth ORBES study region state, Pennsylvania, does not share the Ohio River as a border with another state, and it is presumed this was why Governor Carroll did not include the Pennsylvania governor on his invitation list. (A small portion of southern Pennsylvania is included in the TVA service area.)

In his remarks, Governor Carroll said the regional power plan should concentrate on the energy needs of the states involved. As for energy needs to the east and west, Carroll said, "We would prefer to mine the coal, send it to them, and let them burn it there. Kentucky should not become the ash pit of the nation" (3).

The Kentucky governor emphasized how each state's regulations limited it to considering matters within its own boundaries when deciding on sites for new power plants. In particular, he stressed the lack of a formal mechanism to jointly consider the interstate effects of power plants such as the Public Service Indiana Marble Hill nuclear plant, thirty miles upstream from Louisville, and the nearby Louisville Gas and Electric Co. facility in Trimble County, Ky.

Carroll also acknowledged that some states' regulations are stricter than others. (For example, some observers believe that the Cincinnati Gas and Electric Co. decided to locate its East Bend coal-burning plant on the Kentucky side of the Ohio River, south of Cincinnati, because of less stringent regulations.)

Governor Carroll reported that a formal letter had been sent to fellow governors and the TVA chairman, emphasizing the importance of orderly economic growth to avoid damaging the environment. He also said there was increasing concern about the ability of the Ohio River Valley to support continued unplanned development without severe environmental and social damage (4).

### 8.2.1 Limited to Power Plants

Although Carroll apparently did not intend to include facilities other than power plants in his suggested plan, he did note that other large facilities were competing for prime development land along the Ohio River. He cited "coal conversion facilities, municipal expansion, industrial parks and agricultural pursuits" (5).

At the time of Carroll's call for a regional siting plan, an aide -- Dr. Frank Stanonis, commissioner of the state's Bureau of Environmental Quality -- said: "The site-by-site analysis of this is now passé. We have to look at the total evidence" (6).

The press immediately published favorable responses from aides of two neighboring governors:

"The initial reaction is positive here," said William Watt, administrative assistant to Governor Otis Bowen of Indiana. "We're hopeful the other states will react the same way" (7).

"It's a good idea," said Norton Kay, press secretary to Illinois Governor Dan Walker (8).

Carroll himself apparently has not publicly revealed the nature of any responses from his fellow governors. But his aides implied in the months ahead that the other governors felt the idea would be negatively received by legislators and the general public. They also hinted that the neighboring state chief executives cautioned him against further pursuit of the idea.

However, at least two Ohio Valley newspapers responded favorably in editorials. Among these was the Kentucky Post, published in Covington, Ky., directly across the Ohio River from Cincinnati:

> Nobody's looking at the whole picture...what needs to be done is to look at the whole Ohio River Valley -- our future energy needs and how they will be met.
>
> Governor Carroll took a good first step in that direction seven weeks ago when he called for five

> states along the river to join in a binding alliance to prevent the valley from becoming "the ash pit of the nation."
>
> But his call has gone unheeded. The idea of an "Ohio Valley Compact" needs to be pushed, and pushed hard. The future of the river depends on it (9).

A non-Kentucky newspaper, the Herald-Dispatch of Huntington, W.Va., declared that Governor Carroll had developed "a sensible and worthwhile plan to patrol construction of power plants along the Ohio River" (10). The West Virginia publication argued that it was time to seek "a more orderly, coordinated development of riverfront land". It was also felt that Carroll's plan would serve as an appropriate forum for exploring the question "of what types of plants should be developed along the Ohio River, the nation's principal artery for barges carrying low-sulfur coal to coal-burning power plants and steel mills" (11).

### 8.2.2 Shift to Broad Facilities Siting Emphasis

This last endorsement could offer one possible explanation of why Governor Carroll and his staff did not follow up the initial press conference with equally vigorous presentations in behalf of the plan. The editorial's reference to the "types of plants" to be developed and mention of barge traffic and steel mills suggests some misunderstanding of Carroll's original plan. It seemed clearly aimed at interstate siting of power plants alone. Arguments have been made in various quarters through the years that orderly siting of power plants alone without regard to other installations would not achieve the objective desired by Governor Carroll.

In any case, the record reveals no further strong and specific advocacy by Governor Carroll and his staff of the five-state Regional Power Plan as described in the September 1976 press conference. Instead, they appeared to shift the emphasis to what they usually called simply the need for "multi-state" energy facilities siting arrangements.

For example, Frank Harscher, an assistant to Governor Carroll, declared on February 17, 1977 that "planning among states for the potential increase in new power plants has been clumsy" (12). But instead of using this opportunity to advocate the old Regional Power Plan, Harscher emphasized that Governor Carroll was now leading an effort within the National Governors' Conference (NGC) to give greater attention to energy facility siting problems.

Harscher, Carroll's chief representative to the NGC, made these statements in testimony before Kentucky's Commission on Environmental Quality. He pointed out that Carroll, as chairman of the NGC's Natural Resources and Environmental Committee, had just appointed a Subcommittee on Energy Facility Siting. Chaired by Oregon Governor Robert W. Straub, the new committee included governors from four of the ORBES region states. (Governor James R. Thompson of Illinois, who had just succeeded Dan Walker as governor there;

Governor Otis R. Bowen, Indiana; Governor James A. Rhodes, Ohio; and Governor John D. Rockefeller IV, just inaugurated as governor of West Virginia.)

Another aide to Governor Carroll also appeared at the February 17 Commission meeting and specifically addressed the earlier Regional Power Plan. He was Damon Harrison, long-time Kentucky official and then acting director of Kentucky's Policy Advisory Committee on Energy (PACE). Harrison noted that day-to-day management of the energy crisis through the fall of 1976 and early winter of 1977 had "slowed down" the PACE committee's work on developing the regional power plan for Kentucky and the states whose energy resources and demands were linked to it (13).

### 8.2.3 State-Oriented National Siting Plan Studied

These appearances, then, by Harscher and Harrison early in 1977 seem to distinctly mark an effort by the Carroll administration to refashion its earlier proposal for a regional "power" plan. Such a reformation would appear to emphasize two new approaches: (1) the probable need for any Ohio Valley plan to be a part of a broader state-oriented national siting arrangement; and (2) the desirability that any plan -- regional or national -- include all large energy-related facilities, not power plants alone.

Governor Carroll's staff, particularly Harscher, was active through 1977 in coordinating the work of Carroll's NGC Committee on Natural Resources Environmental Management with Governor Straub's Subcommittee on Energy Facility Siting. In August of 1977, the NGC released a subcommittee report entitled State Perspectives on Energy Facility Siting (14). The report addressed problems associated with the siting of all energy-related facilities.

One year later (in 1978) Governor Carroll was elevated to the chairmanship of the National Governors' Association (NGA). (The old NGC had been renamed late in 1977.) During his final year as governor, Carroll served often as the spokesman for the NGA in negotiations with President Carter and other national officials. He apparently decided not to personally pursue the Ohio River Regional Power Plan within a few months after making the proposal in September of 1976.

## 8.3 INTEREST FROM ORSANCO

Governor Carroll's apparent decision not to seek support from fellow governors for a regional power siting plan did not end his indirect influence in other discussions on this topic. A cabinet-level appointee in Carroll's administration was to become the major spokesman for expanding ORSANCO's authority so that it might become involved in the interstate siting of power plants and other major energy-related facilities in the Ohio Valley. This was Eugene F. Mooney, appointed early in 1978 by Governor Carroll to be Secretary of the Kentucky Department of Natural Resources and Environmental Protection.

### 8.3.1 Warning of Possible Pre-emption

Mooney's interest in interstate siting of power plants in the ORBES region preceded his appointment to the Carroll cabinet by at least one year. In August of 1977, while serving as executive director of the Kentucky Public Service Commission, Mooney accompanied Carroll to a Midwestern Governors' Conference as a speaker. During his address, "The Impact of the Carter Energy Plan on State Public Utility Regulation," (15) Mooney cited the complex siting challenges facing Ohio River Valley states. He also warned the Midwestern governors of the possibility of national "pre-emption" in facilities siting and related areas if the states did not assume leadership themselves (16).

Two months later, in October of 1977, Mooney specifically addressed the question of alternatives for interstate energy facility siting in the Ohio River Valley. This came in a speech delivered at a conference known as the Ohio River Valley Assembly, held at Hueston Woods, Ohio, October 10-12, 1977. More than seventy public officials from the six ORBES states and from relevant regional and federal agencies heard Mooney's comments. He argued that federal officials were ignoring interstate problems associated with energy production:

> Coal production is to double by tomorrow (but) ...Nothing yet has been said about interstate power plant and transmission line siting, fossil fuel production and transportation, or the concomitant pollution and economic development problems inherent in these contradictory goals.
>
> ...One suspects that the federal computer is going to dictate state "energy plans" and, again, is neither going to address the underlying interstate realities nor allow anyone else to do so (17).

Mooney compared the nation's interstate energy plight in late 1977 to a similar dilemma which was being faced in 1970 when "the environmental crisis had just been discovered" (18). According to him, national environmental protection statutes dealing with air pollution, water pollution, and solid waste all appropriately charged the states with the job of implementing new federal programs. This was necessary, he said, because national officials realized that only states and local governments have the power "to regulate smokestacks, build sewers and locate landfills" (19). Mooney continued:

> The federal laws spoke highly of intergovernmental cooperation, expressly eschewed federal preemption, and designated the interstate compact as the chosen instrument for addressing problems of multistate and interstate pollution. The federal government would choose the criteria and set permissible national pollution standards, and the states would enforce them with federal funds, expertise, and the threat of preemption to back them up and stiffen their spines.

> It was a bold and magnificent conception, but alas, it was never to be. Most of our pollution problems lay squarely across state lines, and we have only the creaky constitutional machinery of the interstate compact to deal with them (20).

Mooney then reviewed Article 1, Section 10, of the U.S. Constitution, which allows interstate compacts but requires the consent of Congress in such instances. He also reminded his audience that "the compact is the only method sanctioned by the Constitution for legislation concerning problems in an area less than the entire nation and larger than a single state (21).

### 8.3.2 Advance Agreement Interstate Compact Proposed

Mooney proposed an answer to the cumbersome procedures which have required an average of eight years for negotiation of interstate compacts. This was a system whereby Congress would, by law, give its consent in advance to the terms of an interstate compact which any state could join. Further, the law would authorize the party states to enter into "supplementary agreements" among themselves to address interstate environmental pollution. Mooney reviewed a bill containing these provisions, cited in Chapter 1, which had been passed unanimously by the U.S. Senate in September of 1971. However, the measure, known as the "Interstate Environmental Compact Act," never went to a vote in the House of Representatives because the House Judiciary Committee did not permit it to reach the floor.

Ohio River Valley Assembly participants were urged by Mooney, on leave from the University of Kentucky law faculty, to seek the exhumation of the Interstate Environment Compact Act with particular reference to the Ohio River Valley. He suggested that either the Ohio River Valley Water Sanitation Commission (ORSANCO) or the Ohio River Basin Commission (ORBC), in combination with the Interstate Environment Compact Act, might provide an effective intergovernmental mechanism for addressing multiple siting problems of the valley on a regional basis.

Mooney recalled that the original Interstate Environment Compact Act included a provision relating to land use practices affecting the environment of more than one state. This provision, he said, "was included to permit agreements among states concerning electric power plants and transmission line siting" (22).

Assembly participants stopped short of endorsing Mooney's proposal but at the close of the conference a majority reached general agreement on a statement which encouraged the governors of the six ORBES states to pursue "mutual planning for the orderly development and use of energy resources in the region" (23).

As already discussed in this and previous chapters, Governor Carroll later appointed Mooney secretary of the Kentucky Department of Natural Resources and Environmental Protection. In this role, Mooney served as a commissioner of ORSANCO, and for a time he provided leadership in the consideration of possible ORSANCO involvement in broad facility siting.

# Chapter 8

## Notes

1. Carroll, elected as lieutenant governor in 1971, became governor late in 1974 when his predecessor, Wendell Ford, entered the U.S. Senate. He was elected in 1975 to serve a full four-year term. Under the Kentucky Constitution, governors may not be elected to serve full consecutive terms, so Carroll left office in December of 1979. Succeeding him was John Y. Brown, Jr.

## References

1. Jan L. Saper and James P. Hartnett (Eds.), The Current Status of the Electric Power Industry in the Ohio River Basin Energy Study States, Prepared for ORBES, April 1980.
2. News release from office of Sen. Birch Bayh (Indiana), July 22, 1975.
3. Quotation from Martin E. Biemer, "Carroll Urges Five-State Power-Plant Control Plan," Louisville Times, September 23, 1976.
4. Quotation from Martin E. Biemer, "Carroll Urges Five-State Power-Plant Control Plan," Louisville Times. September 23, 1976.
5. Quotation from Howard Fineman, "Carroll Hopes Plan for Power Growth Will Curb N-plant," Louisville Courier-Journal, September 23, 1976.
6. Quotation from Howard Fineman, "Carroll Hopes Plan for Power Growth Will Curb N-plant," Louisville Courier-Journal, September 23, 1976.
7. Quotation from Howard Fineman, "Carroll Hopes Plan for Power Growth Will Curb N-plant," Louisville Courier-Journal, September 23, 1976.
8. Quotation from Howard Fineman, "Carroll Hopes Plan for Power Growth Will Curb N-plant," Louisville Courier-Journal, September 23, 1976.
9. Editorial, Kentucky Post, November 17, 1976.
10. Editorial, Huntington Post-Dispatch, September 29, 1976.
11. Editorial, Huntington Post-Dispatch, September 29, 1976.
12. Associated Press news story, Louisville Courier-Journal, February 17, 1977.
13. Associated Press news story, Louisville Courier-Journal, February 17, 1977.
14. National Governors' Conference, State Perspectives on Energy Facilities Siting: A Workshop Summary ( NGC Subcommittee on Energy Facility Siting), Washington, D.C., August 1977.

15. Eugene R. Mooney, "The Impact of the Carter Energy Plan on State Public Utility Regulation," delivered at Sixteenth Annual Meeting, Midwestern Governors' Conference, Grand Lake O'the Cherokees, Oklahoma, August 8, 1977.

16. *Ibid*.

17. Eugene F. Mooney, "Another Look at the Interstate Compact: A Supple Device," in Boyd R. Keenan (Ed.), *Energy and Environment: An Intergovernmental Perspective*, Proceedings of the Ohio River Valley Assembly, Urbana, Illinois: University of Illinois, 1978, p. 135.

18. *Ibid*., p. 136.

19. *Ibid*. p. 136.

20. *Ibid*. p. 136.

21. *Ibid*. p. 136.

22. *Ibid*. p. 137.

23. Boyd R. Keenan (Ed.), *Energy and Environment: An Intergovernmental Perspective*, Proceedings of the Ohio River Valley Assembly, Urbana, Illinois: University of Illinois, p.4. (See Appendix A for the complete statement.)

# Chapter 9

# TRANSCENDING OPTIONS

Several of the preceding chapters are concerned mainly with background materials. But at least four chapters deal with complex matters of policy choice with respect to interstate problems associated with electric power generation. In chapter 3, attention was given to remedies available to mitigate negative interstate air quality impacts. Next, in chapter 4, the discussion was broadened to include other possibilities for addressing such impacts.

In chapter 7, the power industry's own structural efforts to respond to broad interstate dynamics relating to power plants -- not just those limited to air quality -- were reviewed. Finally, in chapter 8, other interstate power options explored in recent years were covered. Thus, each of the succeeding chapters moved to policy options for broader forums of decision making. This approach implies no preference for options which span broader areas of activity. Rather, it reflects an apparent trend in the "real world" since the ORBES study was launched in the fall of 1976.

The process also reflects a growing interest in siting of energy facilities, as opposed to other operational aspects of such installations. For example, prior to late 1976 neither top state officials nor representatives of regional organizations in the ORBES study region had proposed an interstate-regional siting arrangement for power plants. However, as described above, a Kentucky governor made such a proposal shortly after the ORBES study was initiated. Then, in less than two years, a water-related regional organization -- ORSANCO -- began an examination of its possible role in interstate siting, not of just power plants but apparently of all major energy facilities. An ORSANCO task force (which later became a "committee") decided that one of the most difficult tasks in such a deliberation was to determine what kinds of facilities might logically be included in an interstate siting arrangement, if indeed one were even brought into being.

One thread, then, but not necessarily the most important one, appears to move through public interstate discussions of the past few years. It is the consideration of interstate-regional siting mechanisms which transcend options for any one type of energy facilities alone such as power plants. Though it persists, many believe the thread is hanging from false premises assuming that a regional siting mechanism could mitigate negative impacts from either power plants or other facilities. For example, the ORBES core team, while not explicitly rejecting interstate siting of power plants as a promising route, did not -- as a unit -- prove or attempt to prove that the device would be helpful to the region as a whole. Its most positive finding was a cautious assessment that interstate power plant siting could reduce "hot spot" air pollutant concentrations.

Thus, this chapter's discussion of interstate siting, particularly as it relates to non-generating facilities, should not be ascribed to the core team or other ORBES researchers. However, it appears to this author that a review here of regional siting and operational considerations for energy facilities in addition to power plants is consistent with the original ORBES mandate.

## 9.1 UNEXPECTED DEVELOPMENTS

As emphasized throughout this report, ORBES findings suggest that air quality problems associated with coal-fired power plants now appear to represent the most difficult challenges for the region in the years ahead. But other developments -- regional, national, or international -- could set in motion broader strategies transcending the coal scene in the ORBES region and even the overall total energy sector there. Any realistic examination of interstate options within the constraints of our federal system must acknowledge such remote possibilities.

The present uncertainty with respect to the use of nuclear energy for electrical generation is a case in point. ORBES research does address nuclear facilities. However, portions of the ORBES main report dealing with nuclear energy will not deal with the possibility that concern over siting and operation of nuclear plants could stimulate new and more relevant deliberations over siting and operation of coal-fired plants as well.

Many deliberations have occurred in recent years, particularly at the national level. Some leaders originally most concerned about the siting and operation of nuclear plants have concluded that a siting and operations plan cannot be effective if it is designed to deal with only one type of fuel use. Further, if it is reasonable to use interstate or multi-state mechanisms in siting and operating nuclear power plants, why not use them in siting other installations associated with the broad nuclear fuel cycle? Should all such installations, including electrical generating facilities, nuclear weapons facilities, uranium mines, uranium enrichment facilities, and waste disposal sites be covered by such a mechanism?

Thus, discussions of interstate or multi-state siting and/or operating mechanisms for coal-fired electrical generating facilities realistically cannot be separated from consideration of nuclear-fueled generating facilities or other nuclear installations. And the complexity does not end there. Given the national policy for reducing our dependence upon foreign oil, regional or national proposals for energy facility siting have increasingly included other types of installations.

Particularly relevant here is the renewed interest in the ORBES region in coal-based synthetic fuel plants, using both gasification and liquefaction processes. Such plants are not projected in the ORBES scenarios, chiefly because these installations are not expected to be a significant energy source by the year 2000 in the study region.

In July 1980, the President signed a bill that allocates $20 billion to spur the production of synthetic fuels to replace foreign oil. The legislation sets a goal of synthetic fuel production equivalent to 500,000 barrels of oil a day by 1987 and 2 million barrels a day by 1992. In practical terms, policymakers will likely be faced with the task of assessing the possible interaction of the impacts from new synthetic fuel plants with certain of the impacts from power plants. Synthetic fuel plants are not expected to have major negative effects on air quality,but it is anticipated they will increase water consumption and thus degrade water quality. Thus, any case being made for future interstate, multi-state, or national power plant siting and operations mechanisms would likely include consideration of incorporating synthetic fuel installations.

The success of the nation in using larger amounts of coal in order to reduce its dependence on foreign oil will rest in part on the response capability of various coal transportation modes: railroads, waterways, highways, and pipelines (for slurry). Many of the transport problems to be faced are intrastate in nature. Solutions to most of the intrastate problems will be built on long legal and institutional histories. However, the possible need to expand existing riverports or to construct new port facilities is one interstate aspect of coal transport that presents new challenges. Protracted conflict between states over major riverport and coal terminal sites on the Ohio River conceivably could bring pressure for such installations to be included in any proposal for an interstate facility siting and operations mechanism.

Much of the discussion in this report and in other ORBES publications relate to possible multi-state action designed to mitigate air quality impacts. However, unexpected events also could trigger the relaxation of existing regulations. For example, Congress could decide that the need to develop energy facilities is so overriding that a mobilization posture is required. The President's 1979 proposal for a national Energy Mobilization Board (EMB), stalled in Congress in late June 1980, assumes such a need for energy development. The EMB proposed by the President would have exercised sweeping powers to expedite energy projects including the lowering of environmental standards for certain energy projects. If the President's proposed EMB or similar legislation should be passed in subsequent sessions of Congress, this would indicate a climate in which further discussions of regional action to mitigate negative air quality would not likely be taken.

Also, it must be kept in mind that the legislation already passed with respect to coal-based synthetic fuel plants and a rapid pace of development of these plants might cause concerns over synthetic fuel plants in the ORBES region to eclipse those concerns over power plants which originally led to the ORBES study.

## 9.2 FOCUS STILL LACKING

When the mandate for the ORBES study was issued by a Congressional committee in 1975, it appeared to some that the focus for interstate action in the energy field would center on siting and operation of power plants. Although problems being identified then are still with us, other concerns -- such as synthetic fuel plants -- have also become prominent. But a focus for concentrating upon interstate energy matters is still lacking.

# Chapter 10

# CONCLUSION

This examination of interstate energy options has moved through various stages. Because the mandate from the Congress emphasized power plant impacts, such effects were first examined, and, because of the ORBES study preoccupation with air quality, two complete chapters were devoted to interstate air impacts. Next, basin waterways and nuclear power plants were explored, before an overall look was taken at the broad interstate structure of the power industry. Then followed a sample of non-industry responses for interstate power options -- again, broader than air quality. Finally, chapter 9 (the preceeding chapter) presented "transcending" options for regional interstate structural arrangements in the ORBES study area. This was the only chapter which moved beyond electric power facilities and developed a context including several other kinds of energy installations.

Now, in this closing chapter, we are faced with the need to offer any conclusions which appear to be justified. Again, because of the nature of the directive from the Congress and the direction taken by the overall ORBES study itself, comments in this chapter will be limited to the electric power industry and the sectors of government which must deal with that industry. Further, since most of the impacts identified during the ORBES study relate to the bulk power supply sector of the industry, the emphasis is upon problems facing that sector.

## 10.1 POWER CONSUMPTION REDUCED

Although the condition has not been emphasized in this report on interstate options, it should be noticed here that the annual rate of electric power consumption has been reduced considerably since the study was mandated by Congress. From an overall national annual growth rate of approximately 7 percent, the rate has dipped to about one-third of that around the country and even less than that in some sections. The ORBES region has not been an exception. It is quite possible, then, that a continued lower growth rate than that projected in 1975 will result in fewer new power plants concentrated in the study region than had been anticipated when the Congress issued the study directive. And, in such a situation, the impacts from the plants -- interstate and otherwise -- might not represent problems of the scope originally expected.

However, the ORBES study results seem to suggest that difficulties can be expected in the region even if a relatively moderate rate of electric power growth continues. Also, with political leaders in both major political parties talking of "re-industrialization," other high energy "futures" flash into focus. If such should come to pass, it seems likely that high power growth rates would once again prevail.

## 10.2 COMMON DILEMMA FOR INDUSTRY AND GOVERNMENT

Regardless of the future rate of growth -- and particularly if higher rates should obtain -- this report on interstate affairs emphasizes that the problems facing the electric power industry and those served by it are truly interstate and/or regional in nature. It also suggests that neither the electric power industry nor the governments responsible for its oversight are well structured to achieve maximum interstate benefits from the resources expended.

These are not new ideas. They go back at least 55 years to a Yale Law Review article which Professor James McLaughlin, a member of the West Virginia Law faculty, has utilized in his study of interstate power challenges (1). The article was written by Felix Frankfurter, later to become a Supreme Court justice, and James Landis. They wrote:

> ...the range of experimentation must not exclude the capacity for cooperation between States. An effective response to the complex of forces loosed by electric power must adapt or devise legal instruments and safeguards adequate to cope with the phenomenon as an entity. And while electric power development does not present a nation-wide system, it does break through the confines of individual States (2).

Surprisingly, given the political ideologies of both Frankfurter and Landis, the two legal scholars chose to cite Herbert Hoover, then Secretary of commerce, as a prophet of what was to come with respect to regional integration of the power industry:

> There is a phase of this whole public relationship that seems to me to be slowly emerging and that is that the United States will naturally divide itself into several power areas. For instance, the barren areas of power consumption formed by the Adirondacks on the east and the character of natural resources along the Mason-Dixon line on the South create a natural district in the New England and Mid-Atlantic States. Another district lies to the west of the Alleghanies and east of the Mississippi River...And if we are to make a rightful solution of national problems we should consider their development as essentially separate problems (3).

Hoover went on, of course, to become a U.S. president who was unable to control unprecedented economic and social forces. He was, in some respects, an accurate prophet, but the development of national electric power grids as well as a "separate" arrangement for the various regions reveals that he underestimated the scope of problems late in the 20th century.

However, from Hoover's time forward many specialists in both the industry and in government increasingly maintained that the most basic problems are interstate and regional. State lines are simply impediments in effective legal and policy resolutions to power problems. This report appears to show that officials in both sectors are aware of this reality but are often paralyzed by state line configurations, interstate relations and interfaces between states and the national government. There seems to be a "will" on the part of national officials to meet such problems, but the burdens of tradition and structure are often too much to overcome. In this conclusion, it seems appropriate to attempt to draw parallels and contrasts between the power industry and various levels of governments in their responsiveness to present conditions and possibilities for the future.

### 10.2.1 Responsiveness of Power Industry

If interstate-regional problems are actually critical now with respect to the operation and regulation of the electric power industry, one might ask why the utilities have not been more responsive in attacking them? Of course the most extreme of critics might argue that they have selfish reasons for not doing so. However, this report and most of the available literature argues that possibilities for economy of scale and other factors are best served when utilities give attention to interstate-regional issues. Why, then, have they seemed reluctant at times to address some of these problems?

Straightaway, let us acknowledge that they have made many attempts. The long and finally successful efforts of AEP to acquire C&SOE is probably a case in point. But the spector of holding company abuses of the 1920's was raised again by those seeking to prevent the acquisition.

The early history of public abuses suffered at the hands of electric power holding companies cannot be erased. And these lingering attitudes are certainly among the several reasons for the industry not being more rationally structured and not being more responsive to the interstate-regional problems at hand.

Perhaps as a result of the memories of the holding company abuses, the Department of Justice has apparently gone on record as favoring "pooling" in joint ventures as a means of achieving regional-interstate coordination rather than through mergers.

With such counsel, the utilities have made attempts to develop pools consistent with urging from several national agencies. However, as implied in chapter 7 (and elsewhere) "management by committee" and apportionment of system costs among pool members often involve significant problems. These are complicated when pool members operate in different states. The problems are made even more difficult by the existing systems of virtually all state regulations which are still concerned largely with traditional rate base questions rather than with capacity planning and utilization, which seem to be the principal determinants of future system costs. Further, many specialists believe that state regulation is by its very nature ill-equipped to effectively deal with the regional character of bulk power supply operations.

Against this backgrop, then, it appears understandable why utility companies are reluctant to address many of the interstate-regional questions emphasized by the ORBES study.

### 10.2.1.1 Pre-occupation of ORBES

It seems safe to say that the single issue which has claimed most public attention as a result of ORBES preliminary findings has been that of long-range interstate transport of air pollutants. If the reasoning utilized in most of this report is accurate it would seem that maximum benefits to both air enforcement officials and utility operators would be forthcoming if bulk power segments were integrated across state lines more effectively. As noted below (and elsewhere), of course technical capability to fully address the long-range transport question has not yet been perfected.

### 10.2.1.2 Understandable obstacles

Obstacles to such integration are both understandable and tinged with irony. Utility leadership is apparently reluctant to risk the criticism which comes with efforts to integrate on a formal basis. They also apparently are increasingly finding that the more voluntary approaches, such as pooling arrangements, dissipate a great deal of time and resources.

A host of conditions have delayed the dialogue with respect to integration of bulk power supply sectors over the past few years. Among these has been the flurry of new energy legislation addressed at questions felt to be more pressing. Debate over a possible Energy Mobilization Board is another factor. Finally, of course, the 1980 presidential and congressional election have consumed the energies of many who might otherwise have been giving attention to such matters.

### 10.2.1.3 Previous Recommendations

A study completed for the old Federal Energy Administration (FEA), prior to the creation of DOE, recommended that legislation be developed and enacted that would federally charter regional bulk power corporations to operate on a multi-state basis and market electricity wholesale (4). The study's authors contended this approach would offer many of the advantages of both consolidation and coordination in achieving the benefits of larger systems with relatively few of the disadvantages.

Contents of this report seem to support this recommendation. But from the viewpoint of the customer and the general public enactment of the recommendation might bring a new set of problems. In the case of vertically integrated companies which produce, transmit, and distribute retail power, the customer can at least envisage a single "entity" in the form of a company from whom he can seek answers. Companies limited to production and wholesaling activities would be far removed from the general public.

As noted previously, the bulk power supply sector is probably the most critical element of the total electric power system. Though citizens would probably continue to be most interested in the distribution system because it is there that they come face to face with the rate structure, the most alert of them would demand (and deserve) an understanding of the total industry.

The FEA-sponsored study is not alone in its recommendation for reducing the number of companies operating at the bulk power level. Many leaders within the industry have recommended over more than a decade that a limited number of bulk power supply systems, say 12 to 15, be developed. They seem to feel that such a step would permit the industry to operate effectively on a regional basis with a minimum of multi-jurisdictional conflicts and would ensure effective regulation. The author of this report certainly cannot respond to the desirability of such a step, but in view of the contents of this paper the idea appears worth careful study.

Perhaps one reason it deserves attention is that discussion of structural changes in the electric power industry might generate public interest in the nation's largest industry, in terms of capital expenditures. No one can deny, surely, that we are in need of greater public awareness of the difficulties being faced by the utilities.

### 10.2.2 Responsiveness of Government

The difficulty of governmental understanding of and action taken with respect to the bulk power sector has been demonstrated in this paper. The report and other ORBES documents have emphasized in particular the difficulty of regional air quality control. The problems facing three EPA regional offices which must monitor the Ohio River Valley, a natural bulk supply sector, have been well documented. The EPA task is made even more difficult by the understandable interests of the six ORBES states in maintaining considerable control themselves over air quality as it relates to the electric power industry.

As government officials wrestle with this problem, should they give attention to the recommendation, noted above, that a limited number of bulk power supply systems be developed? The proposal seems to make sense only to the degree that it would produce a closer match between the boundaries of regulation -- particularly air quality control -- and the boundaries of bulk power supply systems. But the public cannot be ignored in discussions of such possible reorganizations.

## 10.3 NEED FOR EDUCATION

As already emphasized, any change in the bulk power supply sector should be accompanied by a conscious effort on the part of the government -- and the electric power industry -- to encourage the public to view the various sectors of the industry together. This study has shown that the complexity of the industry is so great that few citizens can reasonably be expected to understand even the broadest dimensions of this important sector of society.

Complex conditions such as joint ownership of plants, power pools operating across state lines, and general interconnections of systems are so linked to the public interest that continued inability of a sizeable percentage of opinion leaders to understand these matters is certainly not in the national interest.

Present conditions suggest that environmental abuse will continue for some time. More importantly, perhaps, present conditions lead us to believe that electric power rates will be driven higher and higher by national and world conditions. As this occurs, it seems logical that citizens will respond negatively and with considerable emotion. Social and political disenchantment could result. Our free society can likely withstand such conflict and frustration if our opinion leaders know the electric power industry sufficiently well to explain to their neighbors and friends just why rate increases and continued pollution are necessary. But if these opinion leaders have not been educated themselves to the changing intricacies of this most critical industry -- particularly its interstate aspects -- our political system could face one of its most severe domestic challenges of this century.

Any such educational process must begin somewhere. Probably no other region of the country presents such a combination of critical electric power resources and a richness in interstate dynamics. If the ORBES study can stimulate the initiation of such a truly interstate educational process, it will surely have justified the expenditure of considerable resources which were provided by the national government, the states (through counsel and involvement), the electric utilities (through time and help of various kinds), and the public itself, whose dedicated representatives made efforts to keep the undertaking from becoming an irrelevant academic exercise.

## Chapter 10

## References

1. James A. McLaughlin, Legal and Institutional Aspects of Interstate Power Plant Development in the Ohio River Basin Energy Study Region.

2. Felix Frankfurter and James Landis, "The Compact Clause of the Constitution: A Study in Interstate Adjustments," 34 Yale Law Journal, 685 (1925), p. 712.

3. Ibid., p. 713.

4. Gordian Associates, "Structural Reform in the Electric Power Industry" (Prepared under contract to the Federal Energy Administration, Contract No. CO-05-50152-00, 1976, pp. 28-29.)